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ANNUAL REPORT OF THE DEPARTMENT OF INDUSTRIES, BOMBAY PROVINCE, FOR THE YEAR 1937-38.

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CHAPTER I.

GENERAL INDUSTRIAL OUTLOOK DURING THE YEAR.

PART (i)—REVIEW OF GENERAL CONDITIONS.

During the year under review the pace of industrial recovery referred to in the last year's report suffered a set-back. Except in the cotton textile industry whose comparative prosperity was an outstanding feature of the year, there was a general check in other spheres of industrial activity of the Province owing to deterioration in the purchasing power of the masses, increase in foreign competition in manufactured articles, and greater industrial strife.

2. **Deterioration in the Purchasing Power of the Agriculturists.**—The adverse effects which the prevailing lack of confidence in the future had on world industrial activity coupled with the policy of self-sufficiency pursued by the various countries of the world brought about a slackening in the demand for Indian produce. Consequently the trend in the prices of primary commodities remained downward and the volume of export trade in merchandise was restricted as will be seen from the following figures :—

Wholesale Prices of Agricultural commodities in Bombay.

Articles.	Trade descriptions.	Rate per	Prices.			
			March 1937.	June 1937.	September 1937.	December 1937.
			Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Wheat ..	Delhi No. 1 (White Peasy).	Cwt. ..	5 15 0	5 5 6	5 6 0	5 3 0
Linseed ..	Bold ..	„ ..	8 5 0	7 13 0	8 3 6	7 15 6
Gingelly Seed ..	White Bold ..	„ ..	9 5 0	9 6 0	8 13 0	7 12 6
Groundnuts (bold)	F. O. R., Bombay	„ ..	8 12 0	8 0 0	6 11 0	5 15 0
Cotton ..	Broach fully good	784 lbs.	239 0 0	230 0 0	175 0 0	168 0 0

Bombay Provincial Summary of Exports of Indian Merchandise (excluding Government Stores).

(Figures in crores of rupees)

Year.	Value of Exports.
1935–36	30·45
1936–37	39·55
1937–38	33·32

The diminution in the return to agriculturists combined with the firmness in the prices of manufactured articles resulted in depressing the purchasing power of the masses.

3. **Increase in Foreign Competition.**—Owing to some ease in the European political situation and the slowing down of the race for armaments for the time being, the imports of foreign merchandise into India began to mount up. Despite her military activities in China, Japan also was able to increase her imports of merchandise into India. Thus foreign competition which was less severe during the previous year began to revive during the year under review.

Value in crores of Rupees of Merchandise Imported into British India.

Year.	Articles wholly or mainly manufactured.	All articles of merchandise.		
		Total imports.	From United Kingdom.	From Japan.
1936–37	92·40	125·24	48·07	21·27
1937–38	108·11	173·45	51·82	22·23
Increase (+) or decrease (—) in 1937–38 as compared with 1936–37 ..	+15·71	+48·21	+3·75	+0·96

4. **Money Market.**—The bank rate remained unchanged at 3 per cent. during the year and the tone of the money market was generally easy.

The extent of industrial activity made possible in view of the contributing factors detailed above is illustrated by the pointers reviewed below.

5. **Number of Factories.**—The total number of factories in 1937 increased as compared with the previous year. The increase was attributable more to the extension of the Factories Act to many of the

smaller industrial establishments already in existence in the Province rather than to the growth of new factories during the year.

The comparative figures of the numbers of perennial and seasonal factories in the calendar years 1935, 1936 and 1937 are given below :—

Year.	Number of factories on register.	Number of working factories.		
		Perennial.	Seasonal.	Total.
1935	1,743	855	644	1,499
1936	1,879	952	659	1,611
1937	2,109	1,139	657	1,796

6. **Consumption of Electric Energy for Industrial Purposes.**—The data regarding consumption of electric power for industrial purposes, given in the statement below, point to greater industrial activity during the year. By far the largest part of the increased activity was in the Textile Industry. This is borne out by the fact that the increases are confined to the two territorial divisions, " Bombay City and Suburbs " and " Northern Division," where the Textile Industry of the Province is concentrated :—

Territory.	Number of concerns furnishing information.	Units (in lakhs) of electricity supplied to industrial establishments in		
		1935–36.	1936–37.	1937–38.
Bombay City and Bombay Suburban	3*	3,123·35	3,179·77	4,134·75§
Northern Division	9†	103·20	154·04	186·55
Central Division	11	17·38	19·27	28·09
Southern Division	2	1·04	1·08	1·25
Total ..	25‡	3,244·97	3,354·16	4,350·64

7. **Greater Industrial Strife.**—The loss in working time suffered by the industries of the province due to labour disputes was twice as much as in the previous year. Industrial strife was comparatively more

*Figures of one concern are for calendar year, January to December.

†Figures of two concerns are for calendar year, January to December.

‡Total number of concerns in existence was 31.

§The figure for the group of Tata Hydro-Electric Works included is an estimate based on ten months' actuals.

extensive and the number of establishments affected was more than twice as many as in the preceding year :—

Year.	Number of disputes.	Number of establishments affected.	Number of working days lost.
1935	56	69	242,214
1936	49	41	447,812
1937	88	104	897,211

8. **Industrial Production.**—The available statistics of output of some of the more important organised industries are presented in the table below. Although as compared with the previous year there were increases in the production of the industries studied, the *rate* of the increase during the year was generally less than in the previous year. It may be noted that while the cotton mill production increased by about 10 times the *rate* of the last year, the mining (manganese) production increased only by less than one-fourth of the rate of the preceding year. Being a sheltered industry, sugar was able to double its *rate* of increase in production. The increase in the Match Industry was due to its freedom from strikes during the year under review :—

Industry.	Unit of production.	Production.			Percentage increase or decrease of	
		1935–36.	1936–37.	1937–38.	Column 4 over Column 3.	Column 5 over Column 4.
1	2	3	4	5	6	7
Cotton (woven goods) ..	Millions of lbs.	471	474	528	+ 0·64	+ 10·14
*Woollen and worsted yarn and piecegoods (including Hosiery).	Thousands of lbs.	1,742	1,688	1,523	— 3·99	— 9·77
*Paper ..	Tons ..	3,546	4,023	4,299	+ 13·45	+ 6·86
Match ..	Thousands of gross ..	5,532	3,744	4,360	— 32·32	+ 16·45
Sugar ..	Tons ..	24,746	34,149	59,954	+ 37·99	+ 75·59
*Mining (manganese) ..	„ ..	4,866	28,944	59,764	+494·82	+106·48

*Figures are for calendar years.

9. The comparative slump in trade and industrial conditions was reflected in the abated enterprise in joint stock ventures and in the dullness of the stock exchange for industrial and mining shares.

(*a*) **New Floatations in the Province.**—Fewer number of new companies was registered during the year 1937–38 as compared to the previous year. The number of companies which became defunct was the largest, and the net increase in the total number of companies the least, for the last 5 years. There was a net decrease in the total authorised capital of all the companies on the register. The progress of the joint stock enterprise during the last 5 years will be seen from the following figures :—

Year.	Companies registered.	Companies which became defunct.	Net increase in the total number of companies.	Net increase or decrease in the authorised capital of all companies Rs. (000).
1933–34	134	50	84	—48,40
1934–35	182	61	121	+48,43
1935–36	168	60	108	—31,28
1936–37	164	74	90	+77,03
1937–38	137	87	50	—62,67

Out of the new floatations referred to above, there were 4 cotton mills with a total authorised capital of Rs. 86·0 lakhs, 8 silk mills with an authorised capital of Rs. 59·82 lakhs, 5 ginning and pressing factories with a total authorised capital of Rs. 42·15 lakhs, 3 cinema producing companies with a total authorised capital of Rs. 8·5 lakhs, 5 electric undertakings with a total authorised capital of Rs. 30·55 lakhs, 1 company for the manufacture of radio sets with an authorised capital of Rs. 1·00 lakh, 4 companies pertaining to mines and minerals with an authorised capital of Rs. 16·70 lakhs, 2 engineering concerns with a total authorised capital of Rs. 4·00 lakhs, 1 company for the manufacture of tiles and cement with a total authorised capital of Rs. 5·00 lakhs, 1 glass factory with an authorised capital of Rs. 5·00 lakhs, 13 printing and publishing presses with a total authorised capital of Rs. 13·40 lakhs, 4 companies of chemists and druggists with a total authorised capital of Rs. 9·50 lakhs, making a total authorised capital of Rs. 281·62 lakhs.

During the same period 2 motor works, 2 engineering works, 1 chemical works with a total paid up capital of Rs. 10·39 lakhs, went into liquidation.

(*b*) **Industrial Shares.**—Quotations as at the end of the previous year and also of the year under review for the shares of a few typical companies covering four different industries are set out below to indicate the set-back in the industrial situation of the province which was noticeable during the year :—

Name of company.	Paid up share value.	Market value of share on	
		31st March 1937.	31st March 1938.
Cotton Mills—			
Bombay Dyeing	250	1,057½	881¼
Ahmedabad Advance	100	311¼	400
Sholapur Spg. & Wvg.	1,000	2,300	1,910
Gokak	100	232½	163¾
Electric Companies—			
Tata Power (Ord.)	1,000	1,490	1,345
Sugar—			
Belapur Sugars	50	178⅛	156¼
Mining—			
Shivrajpur	10	62	50

PART (ii)—BRIEF REVIEW OF THE IMPORTANT INDUSTRIES OF THE PROVINCE.

COTTON TEXTILE INDUSTRY.

10. The year under review was a period of comparative prosperity for the cotton mill industry. The prosperity was due mainly to the pre-occupation of Japan with her adventure in China. India's improved trade in foreign countries was chiefly due to Japan's exchange and freight difficulties and a rise in the cost of manufacture. The imposition of quotas on Japanese goods in foreign markets helped to improve the export business of Indian mills. The main features of the year were that although the number of working mills in the Province decreased and

working time was interrupted to a larger extent by industrial disputes, there was, on the whole, considerable increase in the spindle and loom activity due to night shifts being worked on a more extensive scale. Despite there being no change in the tariffs, foreign imports of yarn and cloth dwindled and export demands improved considerably. Raw cotton prices declined and the industry consumed a larger quantity of cotton than during the last year. Production as well as exports of yarn and cloth increased. Stocks were rapidly disposed of at remunerative prices and the mills were able to make good profits.

An event of importance to the industry during the year was the conclusion of the Indo-Japanese Agreement early in April 1937, which provided for the continuance of the old quota arrangement, except that the quota no longer includes Burma and the Indian quota was correspondingly reduced. It may also be mentioned that there was an increase in the duties on art silk cloths and a voluntary limitation of the imports of fents by Japan.

The developments and tendencies referred to above are illustrated by the following review of such statistics as are available. In reading the trade statistics quoted in the succeeding paragraphs, it must be borne in mind that since 1st April 1937 these have been recorded exclusive of the trade of foreign countries with Burma but inclusive of India's trade with her.

11. **Decrease in Working Mills.**—The total number ofcotton mills in the Province decreased by 10 from 191 to 181. The number of mills which remained inactive, either throughout the year or for part of the year, was 20, that is, same as in the previous year. The comparative figures for the last three years are as follows :—

Year ending 31st August.	Total number of mills.	Number of mills that remained idle.	
		Throughout the year.	For part of the year.
1935	190	15	7
1936	191	14	8
1937	181	11	9

12. **Spindles and Looms.**—The total number of spindles and looms installed recorded a decrease consequent on the decrease in the total number of cotton mills in the Province, but owing to extensive night

shift working that prevailed during the year, the spindle and loom activity was greater than in the preceding year. The statement below shows the total number of spindles and looms, their percentages to all-India spindleage and loomage and also the percentage of idle machinery during the last three cotton years :—

Year ended 31st August.	Spindles.			Looms.		
	Total in the Province.	Percentage to all-India total.	Percentage of idle spindles in the Province.	Total in the Province.	Percentage to all-India total.	Percentage of idle looms in the Province.
1935	5,801,618	59·9	14·4	135,015	67·9	12·7
1936	5,818,599	59·0	15·9	135,712	67·8	11·4
1937	5,661,843	58·2	15·8	131,974	66·7	10·6

13. **Decrease in Paid up Capital.**—As a corollary to the decrease in the total number of cotton mills in the Province the total amount of paid up capital of the cotton mill industry decreased by about Rs. 3 crores, Bombay City and Island being responsible for almost the entire decrease. The comparative figures for the last three years are given below :—

(In crores of rupees)

Year ending 31st August.	Amount of paid-up capital of cotton mills in				
	Bombay City and Island.	Ahmedabad.	Other centres.	British Districts of Bombay Province.	Whole of India including Indian States.
1935	12·80	4·91	3·73	21·44	39·47
1936	13·20	5·00	3·37	21·57	40·56
1937	12·49	4·81	3·48	20·78	39·83

14. **Employment, Night-shift, and Strikes.**—The average daily number of persons employed in cotton mills in each of the last three

years is set out in the table below. It will be seen that the average employment during the year 1937 was considerably higher than in the preceding year. This was in the main due to more extensive night-shift working during the year :—

Year.	Average daily number of persons employed. (Official figures for the Calendar year.)
1935	279,623
1936	266,062
1937	301,987

Owing to the spurt that there was in the industry, night-shift working was resorted to, to an increasing extent both in Bombay and Ahmedabad, as will be seen from the following figures :—

Centre.	Year ended 31st March 1938.			
	At beginning of year.		At close of year.	
	Number of mills working night-shift.	Number of workers employed.	Number of mills working night-shift.	Number of workers employed.
Bombay	42	34,566	53	50,053
Ahmedabad	45	22,902	62	39,415

Industrial peace was disturbed to a greater extent during the year under review, the resultant loss in working time being more than double that in the previous year.

Industrial Disputes in the Textile Industry of the Bombay Province.

Year.	Number of disputes.	Number of establishments affected.	Number of working days lost.
1935	32	48	184,650
1936	35	29	356,690
1937	59	78	798,336

15. **Increased Consumption of Raw Cotton.**—The figures of consumption of Indian Cotton by mills situated in the Province are set out below side by side with the figures of imports of foreign cotton into Bombay during the last three years. The increased consumption of raw cotton is a sure index of greater industrial activity during the year under review :—

Period. (Financial year.)	Indian cotton consumed in mills (in bales of 400 lbs.).	Imports of cotton into Bombay (in tons).
1935-36	1,173,273	72,805
1936-37	1,109,331	60,692
1937-38	1,280,507	124,612

16. **Cotton Prices.**—The tone of the cotton market was depressed during the year and the prices sagged and declined successively. The rate for Broach cotton, which was quoted at Rs. 253 per 784 lbs. at the beginning of the year, came down to its lowest level at Rs. 152 at the close of the season.

17. **Increase in Production of Yarn and Cloth.**—There was an all-round increase in the quantities of yarn and cloth produced in the Province. The figures of production were the largest for the last three years. The table below sets out the statistics of production during the years 1935-36 to 1937-38 :—

Production of Yarn.

(Millions of lbs.)

Counts.	Bombay.			Ahmedabad.			Bombay Province.		
	1935-36	1936-37	1937-38	1935-36	1936-37	1937-38	1935-36	1936-37	1937-38
1 to 20 ..	154·3	139·9	143·4	63·5	63·0	67·6	260·8	243·2	252·9
21 to 30 ..	92·9	77·4	102·1	43·9	40·6	45·0	164·5	143·3	172·6
31 to 40 ..	36·7	37·9	54·2	32·7	34·1	39·0	74·1	76·7	100·0
Over 40 ..	19·9	20·7	30·4	26·2	25·3	32·8	48·4	48·8	66·1
Total (including waste).	304·8	276·7	330·6	166·4	163·0	184·5	548·8	512·9	592·1

Production of Cotton Piecegoods.

(Millions of lbs.)

Description.	Bombay.			Ahmedabad.			Bombay Province.		
	1935–36	1936–37	1937–38	1935–36	1936–37	1937–38	1935–36	1936–37	1937–38
Grey and bleached ..	202·5	197·5	224·9	114·5	118·0	129·5	352·5	354·3	396·5
Coloured ..	47·9	45·0	49·4	47·4	48·8	53·0	108·4	107·3	118·0
Others ..	8·0	8·9	8·8	2·1	2·8	3·5	10·3	12·2	12·9
Total ..	258·4	251·4	283·2	164·0	169·6	186·0	471·2	473·8	527·4

18. **Decline in Imports of Yarn and Cloth.**—There was a further steep fall in the imports of yarn and cloth into this country during the year under review. The actual figures are given below :—

Imports of Yarn.

(Thousands of lbs.)

Imports into	1935–36.	1936–37.	1937–38.
British India	44,570	28,520	21,998
Bombay	18,944	13,496	10,849

Foreign Imports of Cotton Piecegoods into British India.

(In millions of yards.)

Year.	Grey and Bleached.	Coloured, Printed and Dyed.
1935–36	595	352
1936–37	481	283
1937–38	335	256

19. **Larger Exports of Yarn and Cloth.**—The export trade in cotton twist and yarn, which had been until the previous year an insignificant factor in the total commerce of the Province, increased about three-fold during the year. The increases both in quantity and value of the exports of yarn during the last three years are shown below :—

Exports of Cotton Twist and Yarn.

Exports from	Quantity. (Millions of lbs.)			Value. (In lakhs of rupees.)		
	1935-36	1936-37	1937-38	1935-36	1936-37	1937-38
British India	9·7	12·1	40·1	46·9	58·6	202·5
Bombay	9·2	11·2	28·1	44·2	53·6	135·5

There was a phenomenal increase in the export trade of cotton piecegoods. The value of the piecegoods exported from Bombay almost trebled as compared with the previous year. The actual figures are given below :—

Exports of Indian Piecegoods to Foreign Countries.

Class of Piecegoods,	Quantity in millions of yards.			Value in lakhs of rupees.		
	1935-36	1936-37	1937-38	1935-36	1936-37	1937-38
Grey (unbleached) ..	8·9	23·2	90·3	18·1	40·9	191·8
White (bleached) ..	1·3	4·6	15·7	2·9	10·3	35·7
Coloured, printed or dyed..	61·1	73·8	135·2	181·9	212·1	422·8
Total (from British India)..	71·3	101·6	241·3	202·9	263·3	650·3
Share of Bombay ..	48·6	71·0	179·7	118·4	149·6	417·0

20. **Cloth Prices.**—The tone of the cloth market remained fairly steady, with an easier tendency, brought about by the depressed state of the cotton market.

21. **Analysis of the year's working.**—During the year under review the Textile Industry on the whole fared well. The latest annual reports of the cotton mills received in this Department show that even those mills which had been working at a loss for several years past, have been able to realise surpluses. Out of the 74 mills in Bombay City and Island, the latest annual accounts for the year ended 31st December 1937 were available for only 19 mills. All except 2 of these 19 mills made profits, and 8 out of 17 profit making mills declared dividends ranging from 4 per cent. to 10 per cent.

Only one mill from Ahmedabad and one from Dhulia furnished latest annual reports. These mills also made profits during the year.

WOOLLEN MILLS AND WOOLLEN INDUSTRY.

22. The production of the local woollen industry declined by about 10 per cent. over last year's figures although this may be somewhat offset by the higher value of the production. The value of imports of woollen manufactures into Bombay increased by 65 per cent. This, of course, has depressed the local mill production. The main competitors against local products are the cheap Continental and Japanese fabrics. The statistics of production and imports are detailed below :—

A Year.	Local production of yarn and piecegoods including hosiery lbs.	Value in lakhs of Rs.	*B* Year.	Foreign imports of woollen manufacture into Bombay (Value in lakhs of Rs.).
1935	1,742,386	28·1	1935–36 ..	95·8
1936	1,687,589	26·2	1936–37 ..	96·05
1937	1,522,984	29·5	1937–38 ..	158·8

A—The production statistics are for Calendar year.

B—The statistics of import are for the financial year ending 31st March of each year.

HOSIERY.

23. There was a distinct improvement in the condition of the Hosiery Industry. The equipment of local factories was somewhat extended and local production increased. The market for hosiery products was elastic and therefore the volume of imports of hosiery into Bombay also

increased considerably. Well equipped hosiery factories helped by existing tariff would be able to meet the local market demands satisfactorily.

The comparative figures of production and imports of hosiery during the last three years were as stated below :—

Year.	Local production of hosiery in lbs.	Value in lakhs of rupees of foreign imports of hosiery.
1935-36	1,234,000	20·74
1936-37	1,829,932	12·13
1937-38	2,007,400	19·98

SILK FABRICS.

24. There was no improvement in the condition of the weaving and other allied silk industry. There was a distinct decline in the imports of silk yarn while both the quantity and value of the imported silk piecegoods increased as will be seen from the following figures :—

Imports.

(Figures in lakhs.)

Year.	Imports of Silk.			
	Yarn.		Piecegoods.	
	Quantity.	Value.	Quantity.	Value.
	Lbs.	Rs.	Yds.	Rs.
1935-36	25·27	59·86	237·97	76·44
1936-37	18·58	45·49	192·42	70·87
1937-38	14·93	41·35	211·00	80·18

In the artificial silk section there has been a marked improvement. Imports of artificial silk yarn increased by nearly 100 per cent. during the year as a result of several medium size weaving factories, complete with preparatory and finishing machinery, having been started in the city of Bombay. The incidence of duty on artificial silk goods has remained the same as stated in last year's report and this has helped considerably the establishment of additional local weaving factories.

Artificial Silk Yarn Imports into Bombay.

Year.	Quantity in lakhs of lbs.	Value in lakhs of rupees.
1935-36	98·29	56·19
1936-37	114·21	67·63
1937-38	206·34	136·55

GAS MANTLE INDUSTRY.

25. The industry as a whole is reported to have done well, in spite of the increase in the imports of gas mantles into Bombay during the year under review. The following are the actual figures of imports into India and Bombay during the last 3 years :—

Year.	Value of imports into India.	Share of Bombay.
	Rs.	Rs.
1935-36	3,47,422	1,58 256
1936-37	2,35,907	1,08,538
1937-38	2,65,853	1,41,289

CHEMICAL INDUSTRY.

26. The chemical industry, except the heavy chemical industry, in the Presidency did fairly well during the year under report.

The number of chemical factories coming under the Indian Factories Act continued to be 9 during the year. The value of imports of chemicals into Bombay increased as will be seen from the following figures :—

Year.	Value of imports.
	Rs.
1935-36	90,11,642
1936-37	72,30,054
1937-38	1,00,54,637

SUGAR INDUSTRY.

27. The improvement in the condition of this industry was maintained during the year under review. The number of sugar factories working during the year remained the same as in the previous year but the number of Khandsari sugar factories increased by one to 9. The production of the sugar factories increased from 34,149 tons last year to 59,954 tons during the year under review. The production of the Khandsari factories was only 58 tons of sugar as against 184 tons reported for the last year. The imports of sugar into Bombay recorded a considerable decline, viz., from 5,313 tons valued at Rs. 5,94,696 in 1936-37 to 2,986 tons valued at Rs. 3,87,445 during the year under report. The prices of sugar during the year were as given below :—

Average Prices per cwt. in Bombay.

Year.	Indian Sugar.		Java Sugar.
	Good.	Ordinary.	
	Rs. a. p.	Rs. a. p.	Rs. a. p.
1935	14 0 10	13 11 7	13 11 6
1936	12 15 7	12 2 10	13 7 9
1937	10 13 8	10 6 2	14 8 9

MATCH INDUSTRY.

28. This industry also registered an improvement in its condition. Although the number of working match factories decreased from 11 to 9, their aggregate production increased from 3,743,507 gross match boxes in 1936-37 to 4,359,588 gross match boxes during the year under review. The foreign imports of matches into the Province continued to be negligible as usual.

PAPER INDUSTRY.

29. Compared to the previous year, the condition of this industry remained practically unchanged. The number of paper mills erected and working in the Province as well as their total authorised capital continued the same as in the preceding year. The output of the three working mills—one each in Poona, Bombay and at Barejadi, Ahmedabad—increased both in quantity and value. The following table shows the progress of the industry during the last three years :—

Year.	Number of factories.	Authorised capital.	Production.	
			Quantity in tons.	Value in lakhs of rupees.
		Rs. (000)		
1935	4	14·25	3,546·19	11·99
1936	4	14·25	4,023·29	13·15
1937	4	14·25	4,299·15	15·30

GLASS INDUSTRY.

30. The glass industry, as a whole, was reported to have done not very well during the year under report due to the Japanese competition. Two or three factories have changed hands and have been reorganised. The factory under erection at Sant Road which was referred to in the last year's report started working from the middle of the year under report. At present the activities of this factory are confined to the production of glass bangles. Another factory was being erected at Kurla under the supervision of a German Expert.

The Department continued to carry out the work of checking the consumption of soda ash by different glass factories in the Province. In all about 221$\frac{3}{5}$ tons of soda ash were consumed during the year by all the glass factories manufacturing glass and glass bangles in the Province. The corresponding figure for the previous year was 267$\frac{1}{2}$ tons of soda ash. The following table shows the imports of glass materials and glassware into India and Bombay during the last three years :—

Imports.

Year	Total imports into India	Share of Bombay
	Rs.	Rs.
1935-36	1,39,39,925	54,50,898
1936-37	1,27,91,728	50,14,216
1937-38	1,51,88,451	62,99,645

OIL MILLS.

31. The industry, as a whole, continued to do well during the year. The number of oil mills in the Province coming under the Indian Factories Act stood at 79 during the year 1937 as against 71 in 1936 and 53 in 1935.

The exports of oil from the Port of Bombay during the last 3 years were as follows :—

Year	Quantity in gals.	Value in rupees.
1935-36	1,428,626	22,19,484
1936-37	1,724,363	26,93,632
1937-38	2,058,806	32,63,964

VEGETABLE GHEE.

32. The two vegetable ghee factories referred to in the last year's report continued to work and were reported to have done well during the year under report.

The requirements of the Province in regard to vegetable ghee are met by the production of the local industry. The actual figures of production of these two factories are, however, not available. The great fall in the imports of vegetable ghee into Bombay that has taken place during the last decade is illustrated by the following figures :—

Imports into Bombay.

Year.	Quantity in cwts.	Value in rupees.
1928-29	131,448	54,73,919
1932-33	18,703	7,32,685
1936-37	782	21,758
1937-38	929	27,596

SOAP INDUSTRY.

33. The industry made considerable progress during the year. Apart from the soap factories coming under the Factories Act, there is no count of the numerous unregulated soap factories in the Province. The progress made by the industry is evident from the fact that while the imports of soap into Bombay remained almost stationary, the exports from Bombay recorded considerable increase both in quantity and value as compared with the last year :—

Imports of Soap into Bombay.

Year.	Quantity in cwts.	Value in rupees.
1935-36	14,016	8,48,000
1936-37	11,003	7,31,361
1937-38	11,030	7,37,372

Exports of Soap from Bombay.

Year	Quantity in cwts.	Value in rupees
1935–36	20,693	2,62,234
1936–37	23,468	2,85,524
1937–38	34,715	6,38,842

CONFECTIONERY.

34. There seems to have been no change in the number of establishments that can be included under confectionery. There are altogether 10 establishments, 4 for biscuit-making and 6 for confectionery, including chocolate. The industry as a whole continued to suffer from internal cut throat competition.

ENGINEERING INDUSTRY.

35. During the year there were 199 engineering concerns against 177 in the last year. The increase is due partly to the extension of the Factories Act and partly to some extent to increased demand on this industry. The main activities have been in structural work, power units, power transmission, machinery spares, small machines mainly agricultural. The manufacture of small crude oil engine units has shown very satisfactory progress which has been maintained throughout. Increased use of electrical and acetylene welding has been made in the fabrication of structural steel. On the whole the engineering industry showed some improvement during the year.

ALUMINIUM-WARE INDUSTRY.

36. The local aluminium factories have been working on a fairly satisfactory production basis and the sales of their products showed fair and steady improvement. The following figures of imports of aluminium-ware indicate the scope that still exists for the expansion of this industry.

Imports of Aluminium-ware into India and Bombay

(Figures in Cwts.)

Year.	Imports into	
	India.	Bombay.
1935-36	63,516	24,282
1936-37	63,246	20,028
1937-38	66,852	27,531

GOLD THREAD INDUSTRY.

37. There has been little or no progress with regard to this industry. The depressed state continues which is largely due to internal cut throat competition. Efforts are now being made to prevent this unhealthy competition by the formation of a marketing association among the manufacturers of gold thread of Surat. The following figures of imports indicate that the local markets still depend to some extent on foreign imports for their requirements :—

(Figures in lakhs of Rupees)

Year.	Value of Imports into	
	India.	Bombay.
1934-35	4·69	1·83
1935-36	5·16	2·05
1936-37	3·71	1·42
1937-38	4·20	1·66

CIGARETTE INDUSTRY.

38. The local cigarette factories of this Province made little or no progress. The requirements of this Province were met to a large

extent by sea-borne (foreign) and rail borne (Indian manufacture) imports. The value of sea-borne imports of cigarettes into Bombay for the past three years is given below :—

Imports of Cigarettes.

Year.	Value in lakhs of rupees.
1935-36	9·67
1936-37	13·37
1937-38	14·69

An enquiry into this industry is now being made by this Department.

PART (iii)—NEW ENTERPRISES.

39. **Celluloid Toys.**—A local importer has put up a factory for making cheap celluloid dolls and toys. The labour is all local and the raw materials, sheets etc. have to be imported from Japan. The class of work turned out is very good.

40. **Glass Bangle.**—Two medium size factories have been established in the Province for making glass bangles. One of the factories is under the supervision of a foreign expert. Glass bangles made by the factory have been exhibited recently in the Exhibition held at Bombay. The class of work turned out appears to be quite good.

41. **Silk Knitting.**—A factory has been established for knitting fabrics from artificial silk yarn and silk yarn.

42. **Electrical Accessories.**—A small factory for manufacture of electrical fittings was started during the year. This would supply a necessary want of the local electrical trades.

43. **Electrical Fans and allied equipments.**—An English firm of Electrical Engineers with Indian connections which used to export on a fairly large scale into the Indian Market has now established a well-equipped factory under the control of English experts for the manufacture of fans. It is expected that should market conditions warrant, the manufacture of small motors would also be undertaken.

44. **Artificial Silk Weaving.**—Six new weaving factories came into existence in the Bombay City during the year.

CHAPTER II.

WORK OF THE DEPARTMENT FOR ORGANISED INDUSTRIES.

45. The Department, as usual, received a number of requests for assistance in the solution of practical difficulties in the various processes of manufacture and for rendering technical advice. This Chapter gives an account of how these requests as well as those for general assistance were dealt with. It also contains suggestions as regards the scope which exists for new industries and describes the activities of the Department in regard to the dissemination of commercial and industrial intelligence and the administration of the State-aid to Small Industries Rules.

Solving of Practical Difficulties in the Processes of Manufacture and rendering of Technical Advice.

46. A few of the requests received during the year for solution of practical difficulties and technical advice are briefly summarised hereunder :—

(1) A local glass factory was given plans and details for a glory hole and 8-pot glass furnace.

(2) Detailed instructions were given to a local pottery works on the layout of hot gas flames to chimney.

(3) Advice on small power plants and machinery arrangements was given to a local factory.

(4) One party interested in button manufacture approached this Department for technical advice which was given.

(5) A party approached this Department with a scheme for the establishment of a bobbin factory in this Province. The scheme was scrutinised and the necessary technical advice was given. Further particulars in the matter of manufacture of bobbins obtained from the Forest Research Institute were also supplied to the party concerned.

General Assistance to Industries.

47. Several of the new concerns that came into existence during the year were visited by the staff of this Department and given, when required, such advice as was necessary. They were also recommended to the several purchasing authorities in the country. In some cases questions of customs duty, supply of cheap raw materials and other

facilities were taken up on behalf of the factories with the authorities concerned. Some examples of this kind of work are reviewed below :—

(1) Some local firms of hardware manufacturers were recommended to the Indian Stores Department.

(2) An association approached this Department for concession of customs duty on "Domnuts" used for button manufacture. The matter was taken up with the customs authorities.

(3) An electric lamps manufacturing company in Bombay requested this Department for free test of their lamps at the Alipore Test House (Government of India). Arrangements were accordingly made and the test report was supplied to the concern. The company's products were also recommended to several Municipal and Government Departments.

Scope for New Industries.

48. In the last year's report in paragraph 59 was given a list of new industries for which there is scope in this Province. The following are some more industries for which there is scope in this Province :—

(1) **Brass and Copper Piping.**—There is a fairly large demand for the manufacture of piping used in the trade, all present market requirements are imported.

(2) **Lead Pipe and Sheets.**—Bombay consumes a considerable quantity of lead pipes and sheets, which is all imported. There are considerable quantities of scrap lead available as well as pig lead. A factory for the manufacture of lead pipes and sheets would meet with a fairly large demand.

(3) **Small Electric Motors up to 10 H.P.**—There is a large local market and considerable scope for a factory to make small motors. Skilled labour and a large part of the raw materials to make the motors are available locally; a small factory would meet a very satisfactory local demand.

(4) **Small Hand-Tools.**—Small hand drilling machines and a large assortment of mechanics and carpentry tools are sold in the local markets which could be supplied by a local factory. The manufacture of hand-tools appears to be a good opening for a small factory.

(5) **Comb Factory.**—A small factory has been started in Bombay for making combs, the raw material being largely imported for making the combs. There is room for expansion.

(6) **Fountain Pens.**—A proprietary small factory has been started in Belgaum for the manufacture of fountain pens. All raw materials are imported. The nibs, the barrels and other fittings are all locally

made. The fountain pens which have been exhibited at the Karnatak Exhibition show very high class of workmanship and finish. There is a scope for further development.

(7) **Emery and Sand Paper Manufacture.**—There is a large local demand for both emery and sand paper which has been mainly supplied by imports. Separate statistics of imports are not available but it would appear that there is very good trade in this commodity. An estimate has been prepared by this Department and is now available to interested inquirers. The capacity of the Plant is 10,000 to 12,000 sheets per day and the capital required would be as follows :—

	Rs.
Machinery	24,000
Working Capital	20,000
Total ..	44,000

(8) **Charcoal Briquetting.**—Details of investigation and report made by the Imperial Institute, London, at the request of this Department regarding the methods of converting charcoal dust into briquettes are available in the office. The papers are available for free reference.

(9) **Manufacture of Veneers and Plywood.**—As mentioned in the last year's report, the local forests in this Province contain certain timbers which could be used for the manufacture of plywood. Industrialists in this Province who are interested in the establishment of such factories may approach this Department for any information and technical advice in regard to this industry.

A general note on plywood manufacture and an estimate for a factory are available in this office to interested inquirers.

(10) **Pencil Manufacture.**—As referred to in the last year's report it is possible for one or two pencil factories to be successfully established in this Province. Detailed investigations in connection with this industry are now being made by this Department. On completion of this work details would be made available to interested parties.

Commercial and Industrial Intelligence.

49. As in the previous year, a number of enquiries for information on the following heads were received and dealt with in this office :—

(*a*) Trade openings.

(*b*) Statistics of imports and exports of raw materials as well as finished products.

(c) Names of dealers and sources of raw materials.

(d) Names of Indian manufacturers of various articles.

(e) Enquiries covering standing of firms.

(f) Miscellaneous.

In the absence of a separate organisation in this Department for the systematic collection and dissemination of commercial and industrial intelligence and statistics, the existing staff of the Department carried on the work as best as possible. Enquiries from abroad for opening commercial relationships with Indian firms were referred to the Director-General of Commercial Intelligence and Statistics, Calcutta; and those from Indian firms desiring to establish trade connection with British firms were transferred to His Majesty's Trade Commissioner, Bombay. As usual enquiries received from outside this province were passed on to the Director of Industries of the province concerned for disposal, with the necessary information wherever it was readily available.

The total number of enquiries received and answered during the year under report was 1,136 as against 718 in 1936-37 and 576 in 1935-36. Under the head (e) 16 enquiries were dealt with. Out of these, 9 were from the Director General of Commercial Intelligence and Statistics, Calcutta; 2 from the Stores Purchase Department, United Provinces; one from the Indian Central Cotton Committee; one from the Director of Industries, United Provinces; and one from the Director of Industries and Commerce, Kashmir, Shrinagar; and 2 from the Indian Stores Department, Bombay.

In addition to dealing with written enquiries a number of enquirers were personally interviewed at the headquarters and helped with the necessary information.

State-aid to Small Industries.

50. A loan of Rs. 2,000 sanctioned in the previous year to a party engaged in the manufacture of detergent products was actually disbursed during the year under review. Two more loans were sanctioned, one of Rs. 3,000 for a slate factory at Bagalkot, District Bijapur, and the other of Rs. 750 for a leather manufacturing concern at Poona but the amounts were not disbursed during the year, pending execution of the necessary documents by the parties concerned. In addition, there were 15 applications for loans ranging from Rs. 500 to Rs. 10,000. In 14 cases, the applications could not be considered as the parties could not furnish sufficient security or did not supply the necessary information. In the remaining one case enquiries were in progress at the close of the year under review.

The firm to whom a loan of Rs. 1,500 was sanctioned and disbursed last year for the manufacture of brass cocks etc. paid their first annual instalment of Rs. 300 together with interest on the 1st March 1938, the due date for payment in accordance with the terms of the order granting the loan.

The annual returns for the year ending 31st March 1938 submitted by the two concerns to whom loans have been given showed fairly satisfactory working of the concerns during the year under review.

CHAPTER III.

EXPERIMENTAL INDUSTRIAL WORK AND PRACTICAL DEMONSTRATIONS FOR THE BENEFIT OF SMALL SCALE AND COTTAGE INDUSTRIES.

Nature of Work Done.

51. The technical processes employed and the appliances used in many small scale industries and cottage industries in this Province are capable of considerable improvement. This Department makes a careful study of each industry on the spot and carries out the necessary experimental work. The Department also explores the possibilities of new industries. In either of the two cases mentioned above there are three stages of work, viz. investigation of the industry on the spot, experimental work in Bombay and later practical demonstrations in the districts for the benefit of the public. The work which the Department was able to do during the year in the matter of investigation, experimentation and practical demonstration in respect both of the existing industries as well as possible new industries is described in this Chapter.

This Department also works in close co-operation with the Industrial Research Bureau and the Industrial Research Council established by the Government of India in carrying out experimental work on different items.

52. **Industrial Engineer's Workshop.**—For some time past the want of a workshop where experimental work can be carried out in improving existing tools, appliances, and fitments necessary for the small village craftsmen and industry has been felt keenly. Government sanctioned during the year the necessary funds for the equipment of an experimental

workshop for the Industrial Engineer where as far as possible all the initial experimental work will be carried out in connection with the introduction of small rural industries or improvements in appliances and fitments of existing cottage craftsmen and/or industries. The orders for the necessary and essential equipment for the workshop were placed and it is expected that the workshop building would be ready for the equipment by about the end of September 1938. Experimental work on different schemes would be started during the latter part of the next financial year when it is expected that all the necessary equipment will have been installed.

53. **Industrial Chemist's Laboratory.**—There was also no suitable Laboratory provided to the Industrial Chemist of this Department as is done in the other Provinces. Hence the Industrial Chemist had to carry out his investigations at the Royal Institute of Science, Bombay. This laboratory is only suitable for carrying out minor chemical experiments and minor chemical tests and analysis. It is unsuitable for industrial research work. The necessity of having a well equipped Industrial and Chemical Engineering laboratory at the disposal of this Department was keenly felt so that important problems of industrial investigations can be carried out and efficient processes for the existing industries as well as for new industries that can be undertaken or started in this Province can be worked out. Proposals were therefore submitted to Government accordingly, for a laboratory and the necessary technical staff. Government were pleased to sanction the establishment of the laboratory for the Industrial Chemist with the requisite staff. As the orders sanctioning the scheme were received by this Department in the beginning of December 1937, only preliminary work regarding the construction of laboratory and the selection of necessary staff and the ordering out of the requisite equipment could be done during the year under report.

Work for the Improvement of the Quality and Quantity of the Products of Existing Industries.

54. **Real Gold Thread and Imitation Gold Thread Industry.**—No further experimental work was done by this Department in connection with Gold Thread. Government sanction was obtained for expenditure on experimental manufacture of imitation Gold Thread and the necessary machinery was ordered out. The work is expected to begin during the second half of the next financial year after the workshop referred to above is set up.

55. **Glass Bangle Industry.**—During the year, three glass bangle furnaces, one medium and two small size, were built according to the

design developed by the Industrial Engineer. Two furnaces—one medium size and one small—were installed in the Karnatak Agricultural Exhibition at Belgaum where the working of the glass furnace was shown to all local glass bangle workers, who made a special request for continuing the working of the two furnaces for another fortnight after the exhibition was over. The work done at the exhibition consisted of proportioning of necessary batch materials, colouring chemicals, and soda bottle cullet glass for making different colours of glasses in the medium size of furnace. Similar work as well as the spinning of glass bangles was done in the small size furnace. The furnaces were well received and one medium and one small furnace have been bought by the Ghodgeri village glass workers. Since then another furnace has been constructed and sold to the Glass Bangle workers of Tallur village. It is expected that in due course several more such small size furnaces would be installed by workers, in other villages. Further experimental work was carried out during the year on different types and designs of glass pots. This work was done in co-operation with a local pottery works. Experiments were made comparing utility costs of imported ready mixed colour chemicals against the locally available different kinds of chemicals used for glass colouring. This work was in progress at the close of the year. No further work could be carried out on account of limited space available at the V. J. Technical Institute, Matunga. Arrangements for further work in different lines of processes of glass bangle manufacture for cottagers would be made and carried out in the workshop of the Industrial Engineer as soon as it is completed.

56. **Village Oil Industry.**—The Department proposed to carry out preliminary experimental and survey work on the expression of oil seeds produced in this Province with a view to developing this industry for cottage workers on the broad lines mentioned in the last year's report. Work in this connection was however held up due to late receipt of orders from Government and the delay in connection with the setting up of a workshop.

Work for the Development of New Industries—Investigation and Practical Experiments.

57. **Slate Slabs.**—Investigation into the question of the commercial manufacture of school-boy slates from locally quarried slate slabs was being carried on by the Department during the year under review. Arrangements have been made with a firm of machinery manufacturers in U. S. A. to carry out specific tests with high speed production machining on the manufacturing qualities of slate slabs available locally.

This test had to be carried out abroad as in India high speed production factories do not exist. Arrangements have also been made with local

slab quarries for the supply of necessary slate slabs for tests in America. After the receipt of reports on the slate qualities, results would be made public to interested parties.

58. **Nicotine and Nicotine Insecticides.**—As a result of the investigations that had been carried out by this Department during the previous years, a party who own and operate a cigarette factory, got interested in the production of nicotine on a commercial scale. They operated for some time a small pilot plant for the production of nicotine. Further developments are likely to take place in the near future when they are satisfied that production of nicotine will be a paying proposition in this Presidency.

59. **Cashew nut Shell Oil.**—Work on this problem was continued. A paper on the work done so far on the problem will soon be published in the Industrial Edition of the Journal of the Indian Chemical Society.

60. **Peppermint Oil.**—Samples of peppermint oil produced at Gadag and in Bombay were sent to the United Kingdom and Europe in order to find out the price which the oil will fetch in the European market. The parties to whom samples were sent reported that the oil was somewhat inferior in quality to the product on the market. Further work, therefore, will be necessary in order to improve the quality of the oil.

61. **Lime or Lemon Oil and Calcium Citrate.**—The work on this problem was almost completed. The commercial plant for the production of lime oil worked successfully during the year under report. Calcium citrate was produced on a pilot plant scale and was sent to two well-known chemical manufacturing concerns in India in order to find out whether citric acid could be made from calcium citrate in India on a commercial scale economically. The results of the experiments carried out by these firms are awaited. It is expected that during the next year about 3,000 lbs. of lime oil and nearly 8 to 9 tons of calcium citrate will be produced in the Province.

EXPENDITURE ON EXPERIMENTAL WORKS.

62. There was no special staff for industrial experimental work as such. The Industrial Engineer and the Industrial Chemist devoted a part of their time to this work. The latter officer had the help of the Industrial Chemistry scholars of this Department. The chemical experimental work was carried out in the laboratory of this Department in the Royal Institute of Science and the engineering work in the Victoria Jubilee Technical Institute, Matunga. The total expenditure incurred during the year on equipment, materials and field demonstrations was Rs. 9,298-9-3. This includes the salaries paid to the temporary field demonstrators entertained for a few months at a time.

CHAPTER IV.

WORK OF THE DEPARTMENT FOR COTTAGE INDUSTRIES.

HAND WEAVING INDUSTRY.

63. The Department continued to assist the handloom Weaving Industry, the premier cottage industry of the Province, by means of peripatetic cotton and wool weaving schools and demonstrations and the Central Hand Weaving Institute at Poona. The objects of these institutions are to demonstrate and train workers engaged in hand weaving and allied industries in the use of improved appliances and fitments and methods. Dyers and calico printers were also assisted in adopting improved appliances and methods in dyeing and printing through dyeing demonstrations.

All the various peripatetic and other institutions referred to in the last year's report were continued during the year under report. Experience showed that it was necessary to increase the number of the dyeing and printing demonstrations in order to satisfy the demands of all the Divisions of this Province. As the Kurubars began to take increasing interest in the adoption of improved appliances and modern methods demonstrated by the wool weaving demonstrations, it was found desirable also to have a regular wool weaving school for young wool weavers on the lines of the cotton weaving schools maintained for *bona fide* weavers. Government were, therefore, moved to sanction two additional dyeing and printing demonstrations and one wool weaving school. They were pleased to do this at a non-recurrent cost of Rs. 2,400 and a recurrent cost of Rs. 4,120 per annum for the Dyeing Demonstrations, and of Rs. 1,400 non-recurrent and Rs. 1,948 recurrent charges per annum for the wool weaving school. Due to the late receipt of Government orders the new institutions could not be started during the year under review.

A brief account of the work of the weaving institutions during the year is given below :—

64. **Weaving Schools for " bona fide " Weavers.**—All the five schools under this head were continued at the old centres reported on in Annual Report of 1936-37 with the exception of the weaving school working at Chandor which was transferred in April 1937 to Yeola in the Nasik District. The location of these schools during the year and the number of fly shuttle looms introduced by them were as shown below.

These institutions were also able to introduce 160 dobbies among the weavers :—

Division.	District.	Place.	No. of fly-shuttle looms introduced.
Southern Division ..	Bijapur ..	Ilkal ..	68
Central Division ..	Ahmednagar ..	Ahmednagar ..	69
Central Division ..	East Khandesh ..	Savda ..	23
Central Division ..	Nasik ..	Yeola ..	18
Northern Division ..	Ahmedabad ..	Chaloda ..	31
		Total ..	209

65. **Weaving Schools for agriculturists.**—Of the two weaving Schools for agriculturists maintained by the Department, one was located at Murgod in the Parasgad Taluka in the Belgaum District and the other at Yadwan, Taluka Palghar, District Thana. The former trained during the year 20 agriculturists and introduced 20 looms.

At Yadwan 10 students completed their course in October 1937 and set up 10 looms. A fresh batch of 10 students was admitted from 1st November 1937.

66. **Cotton Weaving Demonstrations.**—During the year the seven cotton weaving demonstrations worked at the following places where, in all, 56 fly-Shuttle looms were introduced as detailed below in addition to 23 improved types of dobbies :—

Division.	District.	Place.	No. of fly-shuttle looms introduced.
Southern Division ..	Dharwar ..	Hubli ..	1
Southern Division ..	Belgaum ..	Belgaum ..	18
Southern Division ..	Bijapur ..	Guledgood ..	6
Central Division ..	Satara ..	Yelur ..	....
Central Division ..	Satara ..	Talye ..	3
Central Division ..	Sholapur ..	Tembhurni ..	....
Central Division ..	Poona ..	Mancher ..	13
Northern Division ..	Panch Mahals ..	Katwara ..	2
Northern Division ..	Ahmedabad ..	Mandal ..	....
Northern Division ..	Kaira ..	Bochasan ..	5
Northern Division ..	Kaira ..	Porda ..	8
		Total ..	56

67. **Cottage Sizing Set Demonstration.**—Four of the weaving schools are equipped each with a cottage sizing machine as designed by this Department to train weavers on the machine in the preparatory processes of warping and sizing. In addition, a separate demonstration equipped with a sizing set and fly shuttle and carpet weaving looms was also maintained in charge of one head master and assistant master at Kittur in the Belgaum District during the year under report. It trained 35 weavers in sizing and *galicha* weaving and introduced 3 *galicha* weaving looms.

68. **Wool Weaving Demonstrations.**—Three wool weaving demonstrations equipped with improved carders, treadle driven spinning wheel, fly-shuttle looms and providing facilities for training in milling processes and dyeing of wool and woollen yarn were conducted in the different divisions of the Province as detailed below:—

(*a*) The wool weaving demonstration working at Yedalli in the Bijapur District was transferred to Budihal in the same district where it introduced 2 carders, 4 spinning wheels and 5 fly-shuttle looms.

(*b*) The wool weaving demonstration working at Dubere in the Nasik District was transferred to Wavi in the Sinnar Taluka of the same district on the recommendation of the Collector of Nasik in December 1937.

(*c*) The wool weaving demonstration which had been working at Dohad since June 1936 was transferred to Limdi in the Zalod Taluka of Broach and Panch Mahals District.

69. **Dyeing Demonstration.**—The Dyeing Demonstration continued its work at Hukeri in the beginning of the year. As a result of the training received in the demonstration the proprietors of two factories are now dyeing their own requirements.

Two other persons who were also trained, started dyeing on a small scale in their cottages, while the proprietor of a small dyeing and printing works in Pachhapur who adopted printing of fast colours as a result of the demonstration work was reported to be doing well.

The demonstration on finishing its work at Hukeri was transferred to Khasbag, a suburb of Belgaum, which has been famous for the high class saries and bodice cloth woven there. Loose colours dyed at the surrounding places had practically ruined the trade. Demonstrations in improved processes of dyeing various fast colours on silk were therefore given, and the local dyers and weavers were convinced of the usefulness of adopting the same. The small dyehouses in the locality also took keen interest in the work of demonstration and benefited by following the improved processes demonstrated.

Special type of power-driven aerograph printing equipment and screen table printing have been installed in this Demonstration for instructing

local dyers and printers in the most economical and high quality processes of printing delicate quality fabrics and other cloths.

The demonstration was transferred from Khasbag to Belgaum for participation in the Karnatak Agricultural Exhibition in January 1938. It was visited by a large number of persons and its work there was observed with interest and appreciation.

70. **Expenditure on Peripatetic Weaving Institutions.**—The statement given below furnishes particulars of the income from, and expenditure on, all the above-mentioned peripatetic institutions during the year :—

Credit. *Debit.*

Particulars.	Amount	Particulars.	Amount.
	Rs. a. p.		Rs. a. p.
(*i*) Sale proceeds of articles etc.	1,694 13 3	(*i*) Pay of officers ..	....
(*ii*) Fees from students* ..	....	(*ii*) Pay of establishment, i.e. Weaving Assistants, Masters and Demonstrators.	23,027 9 0
(*iii*) Miscellaneous ..	14 14 6	(*iii*) Wages of workmen ..	645 8 5
		(*iv*) Allowances and Honoraria.	3,434 11 0
		(*v*) Scholarships and Prizes	832 0 0
		(*vi*) Stores purchased ..	4,295 0 6
		(*vii*) Other Miscellaneous expenses.	2,525 8 4
Total ..	1,709 11 9	Total ..	34,760 5 3

*Instruction in all the institutions is imparted free of charge.

71. **The Government Hand Weaving Institute, Poona.**—This Institute provides two courses of instruction viz., Advanced and Artisan Courses.

Ordinarily 15 students are admitted each year to each course.

No fees are charged for either course of instruction and scholarships varying from Rs. 5 to Rs. 15 are awarded to deserving students.

During the year 58 applications for admissions were received of which 38 were accepted for dmission—27 to the Advanced course and 11 to the Arti an Course. 15 students who passed in the First Year Advanced Course we e promoted to the Second Year Advanced Course. At the end of the year 1937-38 there were 48 students on the roll of the Institute, 15 in the Second Year Advanced Course, 22 in the First Year Advanced Course and 11 in the Artisan Course.

The Department arranges for the examination of the students by technically qualified men. At the last sessional examination held in May 1937, 38 out of the 40 students who appear d passed. Two students of the Institute passed also in the local examination of the City and Guilds Institute of London.

An important new feature was introduced in the Institute during the year under review. Arrangements were made to provide for six months of practical training to students passing out from the Institute in mills, local handloom weaving factories and small power-driven factories, and schools of this Department. No certificates are issued unless all final year students go through the prescribed course of six months. Six scholarships were provided of Rs. 15 per mensem each for six months of practical training, 3 scholarships for three students of the Artisan Course and 3 scholarships for three students of the Second Year Advanced Course in order of merit on the results of the Annual Examination. This new arrangement is designed to give the students passing out of the Institute—good grounding in practical knowledge as well of the industry.

During the year under report the students were taken on an instructive excursion trip in the N. D. to acquaint them with the different processes and machines connected with textile industry, particularly hand-worked appliances.

The total expenditure incurred during the year under review on the maintenance of this Institute was Rs. 13,028–3–9 as detailed below, there were no receipts :—

Credit.		*Debit.*	
Particulars.	Amount.	Particulars.	Amount.
	Rs. a. p.		Rs. a. p.
(*i*) Sale proceeds of articles ..	....	(*i*) Pay of officers ..	....
(*ii*) Fees from students ..	....	(*ii*) Pay of establishment, i.e. Teaching Staff etc.	7,231 1 0
(*iii*) Miscellaneous ..	....	(*iii*) Wages of workmen ..	120 0 0
		(*iv*) Allowances and Honoraria.	615 3 0
		(*v*) Scholarships ..	1,941 6 0
		(*vi*) Stores purchased ..	577 15 9
		(*vii*) Other Miscellaneous expenses.	2,542 10 0
	Nil.	Total ..	13,028 3 9

72. **Improvements in Hand Weaving Appliances.**—The Department continued to demonstrate improved hand weaving appliances designed by it. The beam system and mechanical dobbies to which reference was made in paragraph 83 of the Annual Report of this Department for 1934-35 were further popularised during the year. As a result, 17 beams and some mechanical dobbies were adopted by weavers.

73. **Miscellaneous Activities of the Weaving Section.**—The staff of the Weaving Schools and Demonstrations rendered assistance to the public in solving their technical difficulties in hand weaving and allied industries, and by supplying them estimates for small handloom and dyeing and printing factories etc. Some examples of such work are noted below—

(1) Detailed advice was given by the Dyeing Demonstrator to the N. C. D. Industrial Co-operative Association, Ltd., Ahmednagar, in formulating a small dyehouse of its own which is functioning well at the time of writing the report.

(2) A brief note on the block printing industry and one on Catechu dyeing were furnished to enquirers.

(3) One man from Taharabad Mission was trained in hand weaving by this Department.

(4) The All Saints' Home, Mazgaon, was helped in adopting an improved type of mechanical dobby.

(5) One party from Borivli was furnished with detailed information for organising a weaving class.

(6) An estimate for a small power loom weaving factory with necessary advice was given to a party in Bombay and one party from Jalgaon.

(7) A tentative scheme for a small hand weaving class for agriculturists was prepared and furnished to the President, Village Improvement Committee, Sholapur.

CHAPTER V.

WORK OF THE DEPARTMENT FOR COTTAGE INDUSTRIES—(Contd.).

TANNING INDUSTRY.

74. **Appointment of Additional Tanning Demonstration Parties.**—During the year under report Government were pleased to sanction the appointment of four more Demonstration parties. The Demonstrators and Assistant Demonstrators selected were given a course of training at the Tanning School at Khar, under the supervision of the Tanning Expert and they were sent out to the districts as soon as they were considered fit.

75. **Progress of the Demonstrations.**—Tanning Demonstrations were held at the following centres during the year :—

Talegaon-Dabhade (District Poona), Mhaswad (District Satara), Talegaon-Damdhere (District Poona), Kalak (District Broach), Chawat Galli, Belgaum (District Belgaum), Malsiras (District Sholapur) and Ratnagiri (District Ratnagiri). A short account of the benefits that accrued to village tanners as a result of these demonstrations is given below.

76. **Demonstration at Talegaon-Dabhade (District Poona).**—The Dhors at this centre did not at first show any interest in the Demonstration at all and in the beginning only one of them attended it. As time went on, however, more and more of them attended the Demonstration. Two men from Poona also attended the Demonstration and one of these was later entertained in a leather factory in Poona where he was in charge of all the dyeing and finishing work. The hides tanned at this centre improved in quality and the price obtained for them increased from Re. 0-5-0 to Re. 0-6-3 per lb. as a result of the work of the demonstration party.

A plot of land adjoining the Dhoriwadi was got from the Mamlatdar and a small shed was erected there with the help of the grant of Rs. 100 given by the Collector of the district. A certain number of tools and equipment was also purchased for the Dhors so that they could continue working on the lines of the training received by them at the Demonstration. The water-supply of the Dhoriwadi was also augmented by the Demonstrator who interceded on behalf of the Dhors and had another water tap fixed for them in the Dhoriwadi. This Demonstration party was posted at this centre for the period from 24th January 1937 to 25th September 1937 but between 3rd March to 20th April it was temporarily transferred to Poona to participate in the Industrial Exhibition.

77. **Demonstration at Mhaswad (District Satara).**—The chief output of this centre is bark-tanned sheep and goat skins tanned with turwad which is available in the neighbourhood. As elsewhere the work done at this centre was very poor. The leather produced was of poor colour and was very badly set out and it was purchased and used by only a few people as it was not good enough to be put to a variety of uses. After the Demonstrators had been working there for a time the colour was improved and the skins were also better worked on with the result that better prices were obtained and the skins had a better and wider demand. Now-a-days, this centre as well as Dahiwadi another centre in the same district where the Demonstration party had worked last year, sell a few of their skins to roller skins manufacturers at a good price and sell the rest for linings. When it is realised that roller skins have to be made of very good material, the fact that these skins are being sold for rollers, is proof of the improvement in their quality.

A step-well in the Dhoriwadi is the only source of water-supply to the Dhors and the fetching of water out of this well is attended with a great deal of hardship. As a wind of fairly good velocity was often noticed by the Tanning Expert during his tours to this centre, he mooted the idea of harnessing the wind-power to lifting of water from the well. Accordingly this Department put up a proposal to Government for putting up a wind-motor and pump for the raising of water from the well at the Dhoriwadi. This proposal has had the approval of Government and soon there will be a wind-mill installed at the well in the Dhoriwadi at Mhaswad, the cost of which will be defrayed by this Department.

Various items of equipment and tools were also purchased for the Dhors of this centre by the Department out of the special grant that had been made by Government for the purpose during the year. The Tanning Industry of this centre has been placed on a firm footing.

78. **Demonstration at Talegaon-Damdhere (District Poona).**—The chief output of this centre is bag-tanned hides for mats, etc. Babool bark and myrabolams are used for the purpose. Although turwad bark of good quality is available locally, it is not used. When the Demonstrators went to this centre it was thought advisable to start the bark-tanning of sheep and goat skins with turwad, an art which was unknown in the place. The quality of the hides was improved and although bag-tanning was still done on the heavy hides, the lighter ones and the calf were done by the "Contact Process" giving a much better-priced product. The introduction of the use of turwad led to the picking of turwad bark, as a small local industry. This formed another means of livelihood in the locality. Dyeing and finishing were also taught to the Chambars.

A large shed was erected at this centre with the help of the special grant. Only the materials for this shed were furnished by this Department and the Chambars themselves did all the work and paid for certain portions of work which they could not do themselves. All the Chambars were attending the Demonstration and they were all using this shed for most of their finishing processes.

The work at this centre was interrupted as the first party had to be shifted after they had been three months at this centre, to participate in the Exhibition at Belgaum. Later, when the additional Demonstration parties were sanctioned, one of these was again posted at this centre as the Chambars wished to have the Demonstration party among them a little longer and had sent a petition to this office to that effect. This party was continuing at this centre at the close of the year.

79. **Demonstration at Kalak (District Broach).**—Although Kalak was at one time a tanning centre, the industry had practically died out some ten or fifteen years ago. But still looking to the potentialities of the locality it was chosen as a centre for holding Demonstrations.

A grant of Rs. 450 was made by the Collector of the district and a complement of Rs. 535 was made by this Department and the whole amount was used to build and equip a small tannery at the village. While building this, a small well was also dug near the tannery so as to ensure a convenient source of water-supply. In all this work the Chairman of the Village Uplift Committee and the Secretary of the Taluka Uplift Committee took active interest and extended their full co-operation. The Village Uplift Committee has given an undertaking that they would continue the upkeep of the tannery for the common good of the Khalpas after the Demonstrators of this Department leave this centre.

Thus at this centre where the resident Khalpas (hereditary tanners) were just making a precarious living by doing odd jobs as casual labourers, the tanning industry has been firmly and well established. Dead cattle are taken up and disposed of properly and the Khalpas work on the hides; tallow is prepared from the carcass, which is either burnt in lamps by the Khalpas or sold; and the possibility of making use of the meat as a fertiliser is also being considered. There are six Khalpas now making a decent living by the pursuit of this industry. Both Babool as well as Turwad are available locally and the collection of these barks incidentally gives the means of earning a few annas to a number of people. The Demonstrators have taught a few of these people how the bark should be pealed and collected. This tanning centre has proved so popular and well attended by the local men that some Chambars from the neighbouring talukas who wanted to attend the Demonstration have had to be sent away as there was not enough room in the model tannery to teach them. Altogether this centre has more than repaid all the work and money expended on it. The Demonstrators are still working at this centre.

80. **Demonstration at Chawat Galli, Belgaum (District Belgaum).**—The leather-workers at this centre are Rajput Dhors of whom there are nearly thirty-five. The work done here is of a greater variety than in many of the other centres. The manufacture of leather goods is also done at this centre and the Dhors used to buy for this work, the higher grades of leather from elsewhere. As this was uneconomical to an extent, this part of the industry was waning. As an immediate result of the work of the Demonstration party the quality of the local production improved and the Dhors started using leather of their own manufacture for all purposes, to their advantage. Dyeing and finishing processes have also been taught to them. On the whole the work done here has been very satisfactory. The Demonstrators are still working at this centre.

81. **Demonstration at Malsiras (District Sholapur).**—Work at this centre was difficult in the beginning as tanning is not the sole means of livelihood of the Chambars. It was only after the Demonstrators had proved their mettle and shown the Chambars the possibilities in their

industry that they all started taking a keen interest in the demonstrations. The work done by the Chambars here is very similar to the work turned out at Talegaon-Dabhade and Talegaon-Damdhere, and the Demonstration party is improving the quality of the work.

The Chambars began to produce better quality of leather and realise better prices than before. The Demonstrators are still working at this centre.

82. **Demonstration at Ratnagiri (District Ratnagiri).**—A Demonstration party was posted to this centre only towards the close of the year under review.

83. **Formation of Co-operative Societies.**—Due to ignorance and absence of *esprit de corps* among the tanning population it has been often found difficult to promote Co-operative Societies for their benefit. However, attempts were made by the Tanning Expert to get together local tanners at different centres in order to form Co-operative Associations for them because the presence of such Societies will make it easier for this Department to keep in touch with the different tanning centres, at which work has been done. His efforts at Dahiwadi, however, proved abortive but at Belgaum the situation was hopeful and it is expected that a Co-operative Society will be formed and registered at this centre in the near future.

84. **Work of the Demonstrators.**—The work done by the Demonstrators is fairly varied. They attend the weekly bazars and select and appraise the hides that come there for sale. They point out the defects in the raw hides to the Mahars and mention ways and means by which they could have been avoided. While they are at a centre they are ready to give any kind of advice to the village tanners, and do whatever they can for the improvement of the quality of the raw hide as well as the leather. In addition to the Demonstration work on a few packs in their small portable tannery they after a time gain the confidence of the village tanners to such an extent that the whole work of the centre is supervised by them, so that ultimately improvement in all aspects of the manufacture and trade is registered in the village or centre.

85. **Demand for the Demonstration Parties.**—Although there are now six tanning Demonstration parties the demand for them is still quite keen and in addition to the centres suggested by the various Collectors, a number of petitions from the rural tanners themselves have been received requesting the Director to send these parties to their respective villages.

86. **Technical Advice and Help to the Trade.**—A number of people in the trade consulted the Tanning Expert with regard to their work. The Tanning Expert also visited the Tanning School at Khar often for rendering Technical advice. During the year the School was given by this Department a non-recurring equipment grant of Rs. 1,500.

87. **Scholarships Tenable at the Tanning School at Khar.**—During the year scholarships were awarded to five candidates for training at the Tanning School at Khar. These candidates were all selected from the depressed classes and their work at the school was supervised by the Tanning Expert. As far as possible people closely connected with the trade were chosen so that they could, after training, go back to their villages and pursue their trade. One of these scholars was entertained as a Demonstrator in the Department.

88. **Special Grant of Rs. 2,300.**—At my suggestion a sum of Rs. 2,300 was placed by Government at my disposal to be expended in providing the hereditary tanners of the Province with sheds and tools and other equipment for the improvement of their industry. The Tanning Expert during his tours studied this problem and the sum was laid out to great advantage at as many as ten tanning centres in the Province.

89. **Scheme for a Government Tanning School.**—A detailed scheme for a Government Tanning School was prepared by the Tanning Expert with plans etc. and the same was submitted to Government. This was under consideration by Government at the close of the year.

90. **Publication of Bulletins.**—A short note on Flaying was written by the Tanning Expert and published by this Department. This Bulletin has been well received and promises to be useful. A Marathi translation has already been published and steps are now being taken for the translation of this into Gujarati and Kanarese.

91. **Expenditure on the Tanning Section.**—The statement given below furnishes particulars of the receipts and expenditure of the Tanning Section :—

Credit. *Debit.*

Particulars.	Amount.	Particulars.	Amount.
	Rs. a. p.		Rs. a. p.
(*i*) Sale proceeds of tanned hides and skins. *etc.*	411 7 6	(*i*) Pay of Officers ..	3,525 0 0
(*ii*) Fees from students* ..	....	(*ii*) Pay of Establishment ..	3,333 1 0
(*iii*) Miscellaneous ..	....	(*iii*) Wages of workmen, *i.e.*, demonstrators, *etc.*	8 8 3
		(*iv*) Allowances and Honoraria.	1,363 2 0
		(*v*) Stores Purchased ..	3,025 13 2
		(*vi*) Scholarships and prizes.	.... †
		(*vii*) Miscellaneous and other Expenses.	616 15 3
Total ..	411 7 6	Total ..	11,872 7 8

*Instruction in all the Demonstrations is imparted free of charge.

† The Scholarships referred to in paragraph 87 were awarded to the selected students from the sum of Rs. 5,000 allotted by the Educational Department.

CHAPTER VI.

WORK OF THE DEPARTMENT FOR COTTAGE INDUSTRIES—(Contd.).

NEW SCHEMES.

PART A.—SCHEMES SPONSORED BY THIS DEPARTMENT.

92. The development of industries especially the cottage and rural industries formed a main plank in the platform of the present ministry. Accordingly, Government made a special lump provision of Rs. 1½ lakhs in the budget of the Department to be utilised during the year for schemes of industrial development to be formulated by the Department and approved by Government. The various schemes put up by the Department included proposals for (*a*) additional demonstrations in weaving, dyeing and tanning; (*b*) establishment of an industrial workshop for the Industrial Engineer and a laboratory for Industrial Chemist to facilitate research work on industrial problems; (*c*) organisation of new demonstrations in various cottage industries other than those already covered by this Department's normal activities; (*d*) the carrying out an industrial survey of the Province; and (*e*) the provision of marketing facilities for the products of all cottage and small scale industries of the Province. Of the proposals put up, Government were pleased to accord their sanction to (*i*) the establishment of the workshop and the laboratory; (*ii*) the organisation of the following peripatetic institutions :—

(1) Two additional dyeing and printing demonstrations.

(2) A wool weaving school.

(3) Three additional tanning demonstrations.

(4) A cane and bamboo work demonstration.

(5) A lacquerwork demonstration.

(6) A Coir Manufacturing School

and (*iii*) a scheme for providing facilities for training hereditary art-craft workers and otherwise to develop the art-crafts of the Province.

The other schemes which were under the consideration of Government during the year under review, related to (*a*) the development of hand-made paper industry, (*b*) the carrying out an Industrial Survey and (*c*) the provision of marketing facilities for the products of the various cottage industries.

Brief accounts of the work done regarding the organisation of (1) the new workshop and laboratory, (2) the additional dyeing demonstrations and wool weaving school and (3) additional tanning demonstrations have been given in chapters III, IV and V respectively.

The work done in respect of the remaining schemes sanctioned during the year is reviewed below :

93. **Cane and Bamboo Demonstration.**—The scheme submitted by this Department in this behalf provided for the opening a cane and bamboo demonstration in the rural parts of the Province with a view to give instructions to the local workers in the use of improved types of tools and in the manufacture of modern types of cane furniture. On receipt of the sanction of Government a demonstration party was organised by the appointment of a Master Craftsman and an Assistant Craftsman and the party located at Dharwar. The local workers in the industry at this centre took advantage of the Demonstration and received training in the manufacture of different kinds of cane and bamboo articles. The Demonstration party will be moved to another centre as soon as its work at this centre is over.

94. **Lacquerwork Demonstration.**—Another scheme sanctioned by Government provided for the opening of Lacquerwork Demonstration in the rural parts of this Province in order to give instruction to the local workers in preparing articles of utility to suit modern taste, so as to develop a better and wider market for these products. The Department selected one Head Lacquerware Manufacture Demonstrator and an Assistant Lacquerware Manufacture Demonstrator with a view to deputing them to the Mayo School of Art, Lahore, for receiving necessary training in superior types of Lacquerware manufacture. After completion of their training the demonstration party will be posted in selected centres of this Province to demonstrate to the workers in the industry, improved methods and modern types of lacquerwork.

95. **Coir Manufacturing School.**—With a view to teaching the use of better types of hand tools, appliances and also the manufacture of better class of coir articles in those Districts of the Province where cocoanut tree plantations exist on a fairly large scale, this Department submitted a scheme for the organisation of a peripatetic coir manufacturing school. On Government approving the scheme, the Department deputed two hand weaving masters of this Department to the Shri Krishna Vilasam Industrial School, Paravur, for receiving the necessary training in coir manufacture. After their training is completed the proposed school will be organised and posted at a selected centre in the Province to train the local workers in this industry. The scheme also provides for the appointment of a Supervisor Overseer whose duties will be to supervise the school as well as carry out a survey into the possibilities of developing coir industry in the different districts where cocoanut tree plantations exist. The Supervisor Overseer could not however be appointed during the year.

96. **Scheme for Training of Hereditary Art-crafts Workers.**—There is a number of centres in this Province where large numbers of

craftsmen are engaged in producing art-wares and artistic articles. Due to their inability to produce articles suited to the requirements of the modern public there has been a great decline in the sale of many of the products of art-crafts. In order to remedy the defects and develop this industry, Government sanctioned a scheme under which arrangements are to be made for the training annually some ten hereditary art-craft workers in the Reay Art Workshop attached to the J. J. School of Art, Bombay, and elsewhere by paying them a scholarship of Rs. 30 per month each. During the year this Department invited applications under the scheme from hereditary workers and selected 10 persons for admission into the J. J. School of Art for training from the next academic year.

An Artist Designer was appointed under the Scheme. His duties are to study in turn each of the art-crafts in the places where they are practised and then to investigate in the consuming centres like Bombay as to what will be readily saleable. He would then prepare designs of such saleable articles and re-visit the centres in question and teach the craftsmen to produce marketable goods.

PART B. Grants-in-aid to Private Bodies for the Development of Cottage Industries.

97. Another means by which the development of cottage industries of the Province was promoted by Government was to sanction grants-in-aid to such bodies as the All India Spinners' Association and the All India Village Industries Association for carrying out approved schemes of work for the development of rural industries. The details of the schemes of the above bodies sanctioned by Government are given below together with a review of the work done by them during the year under report.

98. **Grant-in-aid to the All India Spinners' Association.**—In order to encourage the spinning and weaving of Khadi in the rural areas of the Province, Government under General Department, Resolution No. 2213/33 of 28th October 1937 sanctioned to the All India Spinners' Association a grant-in-aid of Rs. 29,075 for the year under review to be utilised in giving effect to a scheme in this behalf formulated by the Association. The scheme proposed work of a threefold nature as follows :—

(1) Expanding the production activities so as to make this work and the relief to be obtained from it available to a larger number of village artisans.

(2) Improving the efficiency of the spinners and other artisans by manufacturing and supplying to them more efficient implements of an approved type, and giving instruction to them in the use thereof through trained workers.

(3) Examining the existing implements and improving them as also devising new implements to secure better output.

The allotment and actual appropriation of the amount of grant-in-aid under the different heads were as follows :—

	Allotment.			Actual appropriation.		
	Rs.	a.	p.	Rs.	a.	p.
1. Grant for Research workshop.	3,000	0	0	3,000	0	0
2. Making and supplying implements.	9,900	0	0	6,807	6	3
3. Instructors for introducing the above.	4,800	0	0	337	15	10
4. Technical Classes for training village workers as instructors.	2,000	0	0	823	15	3
5. Subsidy on production ..	9,375	0	0	4,481	13	0
Total ..	29,075	0	0	15,451	2	4

The work of the Association in this Province is carried on through its Karnatak and Maharashtra branches which have their head-quarters at Hubli (District Dharwar) and Mul (District Chanda, Central Provinces). The following is a summary of the work done by the two branches of the Association during the year.

99. **Number of Workers benefitted.**—The Karnatak Branch opened nine centres in the Bijapur, Belgaum and Dharwar Districts, covering 135 villages. The number of artisans deriving benefit through it was 4,228. Comparatively little work could be done in Maharashtra because the tradition of spinning had well-nigh disappeared in the villages taken up for work. The Maharashtra Branch opened six centres in the Khandesh District and in the Nasik District and covered altogether 22 villages, the number of workers benefitted being 148 spinners and 10 weavers.

100. **Research Workshop.**—A small workshop fitted up with necessary machines has been set up at Ahmedabad for examining the implements now in use with a view to investigating the possibilities of improving them and also for devising new implements to secure greater output. Experiments are now being made with the vertical wheel to ascertain how far the introduction of speed-wheel and slant spindle can help to increase the speed and an aluminium speed-wheel turning on centre bearings is being tried to see if it can give smoother working. The worker engaged for these experiments has been able to attain so far a speed of 600 yards per hour of 20 counts. A pulley with conical sides is being tried on the spindle to see if it helps to lessen the friction at the sides. A Yeravda pattern charka with a bigger fly-wheel and a slant spindle is also being tried for spinning medium counts with speed.

101. **Manufacturing and Supplying of efficient Implements of approved Type.**—The Karnatak Branch arranged for the manufacture and supply of 1,500 speed-wheels and an equal number of spindle-holders and 800 carding sets. There was some delay in getting these implements in due time. The same could not be obtained from the Saranjam Karyalaya at Sabarmati and special arrangement had to be made with a khadi worker of Ankola (District North Kanara) for preparing them.

In spite of the difficulties 750 old wheels were fitted up with speed-wheels and an equal number of pulleyed spindles were distributed. By this means, it is stated, that the speed in carding in the case of self-carders has reached the standard of 2 lbs. of slivers after 8 hours' working and similarly in spinning the speed has increased from 250 to 325 on the average.

The Maharashtra Branch arranged to manufacture 131 wheels and these were distributed to the spinners.

102. **Instructors for introducing New Implements and giving Training to Spinners in the use thereof.**—The Karnatak Branch opened a training class at Old Hubli first and then at Kaladgi in Bijapur District and recruited and trained in all 22 workers during the year. These workers were absorbed in production and yarn centres.

The Maharashtra Branch engaged the services of trained workers for giving instructions to the spinners in the use of improved implements and tools.

103. **Subsidy on Production.**—The scheme of the All India Spinners' Association provided for a subsidy to be given to weavers at the rate of 1 anna per square yard of cotton khadi and Re. 0-8-0 per wool blanket. The subsidies are to be calculated on the actual production effected by the workers.

During the period from 28th October 1937, when Government issued orders sanctioning the scheme to 31st March 1938, the Karnatak Branch was able to secure production of altogether of 35,511 lbs. of yarn valued at Rs. 25,866 and 72,742 square yards of khadi, valued at Rs. 34,477, as against the amount of Rs. 22,503 distributed as wages to the village spinners and other artisans.

The Maharashtra Branch was able to get a production of 807 lbs. of yarn, which was woven into 2,543 square yards of khadi valued at Rs. 848, during the period from October 1937 to February 1938.

The period to which the figures relate included the busy months for agricultural work and it is stated that the spinners were not at all able to give much time to spinning work as they had to do the field work. The production figures obtained by the Karnatak Branch in spite of this handicap are remarkable.

The scheme of the Association also provides for the encouragement to the woollen blanket industry, and the grant sanctioned by Government helped to give an impetus to this industry. The Karnatak Branch arranged to produce altogether 547 blankets in the Bijapur and Dharwar Districts.

The Maharashtra Branch started a special centre for this purpose at Mhaswad in the Satara District as the District offered suitable facilities for the production of woollen blankets, but as the work was started rather late, only 333 blankets could be produced, during the course of the year under review.

104. **Grants to the All India Village Industries Association.**—Under Government Resolution, General Department, No. 9101 of 17th November 1937, Government sanctioned a total grant of Rs. 8,500 to be expended on five schemes proposed by the Association.

The following are the figures of expenditure sanctioned by Government, the amounts drawn by the Association and the amounts actually spent against each proposal :—

	Expenditure sanctioned by Government.	Amount drawn by the Association.	Amount actually spent by the Association.
	Rs. a. p.	Rs. a. p.	Rs. a. p.
I. *Training of candidates in Jaggery-making out of palmyra as well as date-palm juice.*	7,050 0 0	2,878 0 10	2,878 0 10
II. *Scholarships in paper-making and oil pressing tenable at the All India Village Industries Association Training School at Wardha.*	600 0 0	1,135 0 0	585 0 0
III. *Setting up of ghanis of approved type for demonstration purposes at five centres in the Province.*	550 0 0	409 9 6	409 9 6
IV. *Free analysis and tests by Government laboratories of the samples sent by the All India Village Industries Association.*	*Nil.*	*Nil.*	*Nil.*
V. *Subsidy to the All India Village Industries Association for publication of leaflets, pamphlets, etc., on subjects relating to the development of village industries.*	300 0 0	300 0 0	283 0 0

* Below is a summary of the report furnished by the Association on the execution of the various proposals during the year.

105. **Training of Candidates in Jaggery-making out of Date-palm and Palmyra Juice.**—The orders of Government having been received at the end of November 1937, full advantage could not be taken of the entire season for tapping palm trees, which commences with the cessation of the rains in October.

The five centres at which work was actually taken in hand were as under :—

District.	Centre.
1. Bombay Suburban	.. Vile Parle.
2. Thana	.. Bordi (Taluka Dahanu).
3. Surat	.. Haripura (Taluka Bardoli) (instead of Jalalpur Taluka).
4. Belgaum	.. Hosur (Taluka Saundatti).
5. North Kanara	.. Bhatkal (instead of Honavar).

The changes made in centres 3 and 5 were approved by Government.

The staff engaged consisted of 5 tappers, 3 pan boilers and 2 instructors. The services of three tappers and one instructor had to be requisitioned from Bengal. The entire expenses of the journeys of the tappers and instructors amounting to Rs. 267 were met out of the sanctioned grant. The other members of staff were recruited locally. All the tappers generally were familiar with the processes of pan-boiling. Assistance for the work of pan-boiling had, however, to be given to the tappers, except at Bordi and Bhatkal. One of the instructors was placed at Haripura while the other was engaged at Bhatkal, where work was carried on for a longer duration and a larger number of students was trained than at the other centres. The expenses on account of the instructors and the persons engaged for tapping and pan-boiling amounted to Rs. 693–13–8. The numbers of students trained at the various centres and the period of the training were as under :—

Centre.	No. of students per batch.	Period of training of each batch.
Vile Parle	2	4 months.
	2	1 month.
Bordi	8 13 19	1 month.
Haripura	5	1 month.
	1	¾ month.
Hosur	1	½ month.
	5 8	1 month.
Bhatkal	12 10 10	1 month.

The total number of students trained was 96 and the total amount granted by way of scholarships was Rs. 954-8-0.

In response to the representation made by the Association to the Commissioner of Excise, Government were pleased to allow certain changes in the rules in force for the tapping of trees for purposes of *gul* manufacture.

At all the centres, except Bhatkal, only date-palm trees were tapped. At Bhatkal cocoanut trees were tapped.

The number of trees tapped at the various centres, and the period for which tapping was undertaken, together with the aggregate quantity of juice tapped and the gul manufactured therefrom are shown in the table below :—

Centre.	No. of trees.	Period.	Total Quantity of juice tapped.	Quantity of gul prepared.
1. Bordi	54	65 days ..	762 gallons	777·24 lbs.
2. Haripura	14	35 „	527 lbs.	60 lbs.
3. Bhatkal	60	90 „	6,292 lbs.	1,055 lbs. 25 tolas.
4. Hosur	60	49 „	3,726 lbs.	588 lbs.
5. Vile Parle	40	3 months with interruption.	2,969·5 lbs.	395·5 lbs.

The Association's report states that the results vary from centre to centre, but where work was carried on systematically the experiment gives ground for hope that if the permission that has been granted to the All India Village Industries Association to tap trees is extended to individual tree-owners or lessees, they may be able to derive a small income from the industry mainly to supplement other sources of income. The granting of such permission and the training of the rural population in this industry is particularly necessary in areas where prohibition is introduced and the tapping of trees for toddy is to be prohibited. The experience that has been obtained hitherto shows that the gul-making out of sweet toddy juice does not involve any considerable outlay of expenditure and that the industry can be carried on by toddy-tappers and other agriculturists after undergoing a simple course of training at centres like those opened by the Association in the year under report.

106. **Scholarships.**—Out of the scholarships sanctioned under Government Resolution No. 9101 of 17th November 1937, nine were

awarded for the course in paper-making, which commenced in February. The scholars were selected on the basis of their qualifications including the possibility of utilizing their services as demonstrators in paper-making. The course of studies started in Wardha on 1st February and was of four months' duration. A sum of Rs. 585 was paid in advance to the All India Village Industries Association, Wardha, as the cost of training and to defray the boarding and lodging charges of the students. For training in oil-pressing, ten students were selected and the sanction for the payment of Rs. 585 to the All India Village Industries Association for their training was obtained and money drawn. The sum could not, however, be utilised during the year under report.

107. **Ghanis.**—A grant of Rs. 550 was sanctioned for this purpose. It was used to the extent of Rs. 89-9-6 for deputing the carpenter (Mistry) from Wardha to Belgaum to set up a ghani at the Karnatak Agricultural Show. In accordance with the prescribed design and specifications, local workers of the Association undertook to prepare ghanis in selected centres and grants of Rs. 40 each were sanctioned for 8 such centres absorbing a total sum of Rs. 320.

108. **Free Analysis of Samples.**—Circulars were sent to all workers of the Association regarding the facilities sanctioned by Government for the free analysis of samples at the Laboratory of the Agricultural Chemist to the Government of Bombay. Samples of pure honey, soil containing saltish matter and *gul* from palm juice prepared at two centres were sent to the Agricultural Chemist, who was kind enough to report on the samples very promptly.

109. **Publications.**—A grant of Rs. 300 only was applied for and sanctioned. This was utilised for the publication of a brochure on Chrome Tanning for villages, which was originally published by Sjt. Satish Das Gupta of the Harijan Sevak Sangh. The brochure was translated into Marathi, Gujarati and Kanarese. The cost of printing amounted to Rs. 228 and of translation to Rs. 55.

CHAPTER VII.

WORK OF THE DEPARTMENT FOR COTTAGE INDUSTRIES—(Concld.).

MARKETING OF HANDLOOM PRODUCTS.

A—Cotton.

110. **The Government of India Grant.**—The Government of India grant received by this Province for the Marketing Scheme for Handloom Products, was Rs. 39,000 for the year 1937-38. The expenditure incurred on the Scheme during the year under review amounted to Rs. 27,751.

111. **Working of District Industrial Associations.**—Of the four District Industrial Associations at Poona, Ahmednagar, Hubli and Ahmedabad which were in existence at the beginning of the year, all except the Poona Association continued to function throughout the year under review. The Poona Association worked satisfactorily only for a time, but thereafter it was found that the management of the Association did not take sufficient interest in the working of the Association, despite repeated warnings. The Joint Board with the sanction of the Government, therefore, ultimately decided to suspend all the subsidies payable to the Association. In the meantime an officer appointed by the Registrar of Co-operative Societies, held an enquiry into the affairs of the Association and reported that there was no prospect of rejuvenating the Association. The Association was, therefore, wound up from 1st October 1937.

112. **Organisation of New Associations.**—Proposals were sanctioned by Government during the year to utilise the savings arising from the closing down of the Poona Association, to organise a new Association at Sholapur. An Association at Sholapur was accordingly organised and registered during the year, but it has actually started functioning only from the middle of April 1938.

The Association at Yeola which had been organised last year, started functioning from the beginning of September 1937, and worked satisfactorily during the remaining part of the year under review.

As difficulties were experienced in collecting the necessary share capital of Rs. 5,000 for the organisation of Associations at Malegaon and Bhiwandi, Government authorised the Joint Board to (*i*) relax the condition regarding the collection of Rs. 5,000 capital by weavers of each of the above places and to make the annual grant even if a smaller sum is collected as capital and (*ii*) make a non-recurrent advance of a sum not exceeding Rs. 2,000 to each of the Associations to serve as capital. The organisation of the Association at Malegaon was proceeded with and it was registered during January 1938. This Association is expected to commence actual working from the second quarter of 1938-39. The efforts of this Department as well as of the Co-operative Department and the local Revenue Department officials, for organising the weavers of Bhiwandi did not meet with success.

During the year Government sanctioned further proposals to utilise the anticipated savings under the Scheme for organising new Industrial Co-operative Associations at Dhulia, for East and West Khandesh Districts, at Kamatgi for Bijapur District and at Sangameshwar for the Mahar (Depressed class) weavers of the Malegaon Taluka in Nasik District. Work in connection with the organisation and registration of the Associations at these places was taken in hand during the year under review.

113. **A Small Dye House for the Industrial Association at Ahmednagar.**—It was represented by the Ahmednagar Association

that it had reached a stage where it was absolutely necessary for it to have its own dye-house in which the great variety of fast colour shades required by it for its products, could be dyed conveniently and economically and that it was not in a position to start a dye house without Government assistance. Both the Advisory Committee and the Joint Board recognised this need of the Association, and recommended a non-recurring grant not exceeding Rs. 2,000 to the Association to meet its expenses for the establishment and equipment of a small dye house. Government accorded sanction to the proposal, and the Ahmednagar Association was paid a non-recurrent grant of Rs. 2,000 to enable it to set up a small dye-house for meeting its requirements.

114. **Introduction of New Designs.**—The Textile Designer of this Department visited the Associations frequently to advise them with regard to the manufacture of new designs and patterns. He introduced about 34 patterns of borders for sarees, 30 patterns in curtain cloth, 24 patterns in coating and 40 patterns in shirting. Manufacture of grand rille coatings, dhotees, easy-chair cloth, bed-sheets, was introduced in Hubli and Ahmednagar.

115. **Results of the Year's Working.**—The Associations at Ahmednagar, Hubli and Ahmedabad were in existence during the whole of the year; the Poona Association was closed from 1st October 1937 and the Yeola Association started functioning from 1st September 1937. An idea of the results of the working of the Scheme can be had from the statements of figures of membership, capital, turnover and gross profit of each Association for the year 1936-37 and 1937-38—*Vide* Appendices A and B.

B—Woollen Industry.

116. **The Government of India Grant.**—As stated under paragraph 117 of the Annual Report of this Department for 1936-37, a grant-in-aid of Rs. 12,600 for 1936-37 and of Rs. 13,948 for 1937-38 was allocated to this Province by the Government of India to undertake the Scheme for the Development of the cottage and small scale woollen industry of this Province.

117. The main features of the scheme formulated by this Department were described in the last year's report. The scheme was under the consideration of the local Government pending approval of the same by the Legislative Assembly. On obtaining the approval of the Assembly, Government sanctioned the scheme partly with some modifications in October 1937. On further consideration, however, the scheme was sanctioned *in toto* in March 1938. Owing to the very late receipt of the orders, it was not possible to put the scheme into operation during the year under report. The only expenditure incurred during the year was

of Rs. 502-10-0 on account of advertisement charges for the post of Wool Expert, and for office furniture for the new establishment under the scheme.

CHAPTER VIII.

TECHNICAL AND INDUSTRIAL EDUCATION.

118. **Number of Schools.**—The numerical strength of technical and industrial schools in the Province during the year under review was as follows :—

Schools maintained by public and private bodies, aided by the Department.	24
Government Technical Institutions	1
Institutions only recognised by the Department ..	35
Total ..	60

A complete list of these Institutions is given in Appendix C to this Report.

THE COMMITTEE OF DIRECTION FOR TECHNICAL EDUCATION.

119. **Personnel.**—There was no change in the membership of the Committee during the year under review and the Committee continued to function satisfactorily. I continued to be the Chairman of the Committee.

120. **Inspection.**—The post of the Teaching Inspector was filled up during the year and the new Inspector inspected all the schools recognised by the Department. This was further supplemented by periodical inspection by the Secretary of the Committee. I also inspected, while on tour, some schools.

121. **Instruction.**—The courses of instruction offered by these schools and of which a list will be found in Appendix D to this Report, remained practically the same as in the previous year.

122. **Examinations.**—Of the 1,880 candidates who appeared at the annual examinations for 1936-37 held in April 1937, 1,526 or 81 per cent. were successful. Of the above numbers, 608 candidates took the final year examinations of the different courses and 533 passed and were awarded certificates.

123. **Grant-in-aid.**—The total amount expended on the recommendation of the Committee of Direction for Technical Education by way of recurring grant-in-aid during the year was Rs. 38,813 and non-recurring equipment grants amounted to Rs. 849-13-0 of which particulars

are set out in Appendix C to this Report. A *pro forma* grant-in-aid of Rs. 1,304-9-0 was also made to the R. H. Patuck Industrial School, Matunga.

124. **Recognition.**—During the year the following 4 institutions were granted recognition :—

(1) The Chicago Radio Institute, Bombay.

(2) The Parsi Technical and Industrial Institute, Surat (Carpentry and Wiremen's Classes).

(3) The Modern High School, Ahmednagar (Carpentry and Tailoring Classes).

(4) The Primary Handicrafts Classes, Girgaum, Bombay.

In addition to the foregoing, applications for recognition received from the following institutions were under consideration :—

(1) The Chamdewalaki Wadi Committee Tanning School, Khar.

(2) The Maharashtra Mudran Shala, Poona.

(3) The Bhagini Samaj, Bombay.

(4) Sir Parshurambhau College Radio Class, Poona.

(5) Technical Institute attached to the Fergusson College, Poona.

(6) Tailor's Cutting Academy, Poona.

125. **Miscellaneous.**—A number of enquiries and requests for information, advice and suggestions relating to technical and industrial education and cognate matters was received and disposed of.

126. **Expenditure of the Committee of Direction for Technical Education.**—A grant of Rs. 14,715-15-0 was made by the Department to the Committee of direction for Technical Education to meet its expenditure during the year under review as shown below :—

	Rs.	a.	p.
(1) Establishment charges	4,400	0	0
(2) Inspection charges	2,592	11	0
(3) Examination charges	7,723	4	0
	14,715	15	0

A sum of Rs. 2,970 was received as examination fees, etc., against Rs. 2,313-12-11 in the previous year, and was credited to Government.

THE VICTORIA JUBILEE TECHNICAL INSTITUTE, BOMBAY.

127. It is interesting to note that during the year under review this Institute reached the 50th year of its existence.

The number of courses offered by this Institute remained the same during the year.

Two hundred and fifty-four applications for admission were received and 149 were admitted of which latter 110 belonged to this Province. This clearly indicates that the popularity and prestige of this Institute are country-wide and not confined to this Province.

The results of the final sessional examinations set out below indicate the very satisfactory progress made :—

Course.	Number of students who	
	appeared.	passed.
Mechanical Engineering	46	40
Electrical Engineering	45	38
Textile Manufacture	36	36
Technical and Applied Chemistry	13	11
Sanitary Engineering and Plumbing	8	7

It is satisfactory to note that during the year 60 students of this Institute were successful in the City and Guilds Institute of London examinations.

128. **Miscellaneous Courses.**—It is gratifying to note that the miscellaneous courses offered by the Institute on Saturday mornings and in the evenings in Elementary, Mechanical and Electrical Engineering, Cotton Spinning and Weaving, Electrical Wiremen's and Electricians' work, Elementary Principles of Radio Communication, maintenance and repair of Radio Instruments, etc. continued to be attended by a large number of people employed in the different trades in the city of Bombay.

129. **Expenditure.**—The total expenditure during the year incurred by the Institute amounted to Rs. 2,54,196 of which Rs. 1,25,000 were as usual given by Government as a grant-in-aid.

THE RANCHHODLAL CHOTALAL TECHNICAL INSTITUTE, AHMEDABAD.

130. **New Admissions.**—During the year under review, there were 60 new admissions to the Institute of which 12 were in Cotton Spinning, 20 in Cotton Weaving and 28 in Mechanical Engineering Courses.

The total number of students on the roll on 31st March 1938 was 116.

A number of private scholarships and 6 Government scholarships of Rs. 10 each were awarded as usual to deserving students during the year.

One hundred and sixteen students appeared at the annual examination in April 1937 of which 103 passed. Fourteen students of this Institute, it is gratifying to note, passed the various examinations of the City and Guilds Institute of London.

131. **Wiremen's Classes.**—The new Wiremen's Classes organised in July 1936 were well attended during the year and of the 25 students who appeared at the sessional examination 15 passed.

132. **Miscellaneous.**—During the year under review, the new textile workshop, dyeing laboratory and new lecture rooms were completed and the old boiler was replaced by a new one of the water-tube type with economiser and with all necessary recording instruments. These additions, needless to say, have enriched the equipment and facilities of this Institute considerably.

133. **Expenditure.**—The total expenditure incurred during the year was Rs. 60,389–3–1 against Rs. 36,064–13–6 in the previous year and the receipts were Rs. 3,782–0–3 against Rs. 3,729–5–6 as detailed below :—

Credit. *Debit.*

Particulars.	Amount.	Particulars.	Amount.
	Rs. a. p.		Rs. a. p.
(*i*) Sale Proceeds of articles ..	408 2 3	(*i*) Pay of Officers ..	6,910 11 0
(*ii*) Fees from students ..	3,358 14 0	(*ii*) Pay of establishment ..	18,868 4 0
(*iii*) Miscellaneous ..	15 0 0	(*iii*) Wages of workmen ..	....
		(*iv*) Allowances and Honoraria.	....
		(*v*) Scholarships ..	1,000 7 0
		(*vi*) Stores purchased ..	3,138 9 10
		(*vii*) Other miscellaneous expenses including the cost of a new boiler installed.	30,471 3 3
	3,782 0 3		60,389 3 1

SCHOLARSHIPS

134. **Government Special Scholarships tenable at the Victoria Jubilee Technical Institute, Bombay.**—Of the 10 scholarships available for award each year to the Intermediate and Backward Classes and Muhammadans, 5 were awarded to Intermediate Classes and 3 to Muhammadans. No awards for the Backward Classes could, however, be made for want of suitable candidates belonging to that community.

135. **Scholarships in Technical Chemistry.**—The two scholarships awarded in 1936-37 for research work—one tenable at the Indian Institute of Science, Bangalore, and the other at the Royal Institute of Science, Bombay—were extended for one year more and two new ones were awarded during the year—both tenable at the Royal Institute of Science, Bombay. One of the two new scholars, however, relinquished the scholarship awarded to him in the last quarter of the year under review.

136. **Scholarships in Electrical Engineering.**—The scholarship for practical training in Electrical Engineering awarded in 1936-37 was terminated as it was sanctioned for one year only. One new scholarship was awarded during the year under report but the scholar some time after his admission to the Workshop of the Bombay Electric Supply and Tramways Co. Ltd., Bombay, relinquished the same. The scholarship thus remained vacant for the remaining period of the year.

137. **State Technical Scholarship Tenable Abroad.**—A special scholarship for Textile Manufacture tenable at the College of Technology, Manchester, awarded by the Government of Bombay in 1933-34 to Mr. Halkatti, was further extended for six months to enable him to obtain practical training in weaving mills on the Continent.

APPRENTICE SCHEME.

138. In last year's annual report, a brief reference was made to the Apprentice Scheme sanctioned by Government and of its introduction in Bombay City and Ahmedabad with effect from 1st July 1937. The progress of the Scheme during the year under review and its present position may be gauged from the following statistical summary :—

Number of applications received from candidates seeking admission to the Scheme				553
Number permitted to sit for the admission examination				432
		Bombay.	Ahmedabad.	Total.
Number actually sat for the examination.		287	104	391
Total numbers of apprentices placed in mills and other industrial concerns.		235	92	327
Distribution of apprentices by mills and workshops.	Mills	142	92	
	Workshops	93	..	
		235	92	327
Number of co-operating establishments.	Mills	35	25	
	Workshops	14	..	
	Presses	3	..	
	Chemical firms.	2	..	
		54	25	79

139. As to be expected, there was considerable unrest amongst the apprentices largely due to the fact that they found the transition from school to industrial apprenticeship without any previous initiation somewhat trying and difficult. Nevertheless, it is a matter for satisfaction that the wastage was comparatively little. It was noticeable, however, that most of the boys had developed no definite interest or bias for industrial occupation. Their physique too was on the whole not satisfactory. It is essential that there should be attracted to the Scheme boys of good physique who have liking for industrial work and who are prepared to work hard and diligently. No useful purpose will be served by those who seek admission under the Scheme entertaining the notion that they are entitled to receive special favours, concessions and treatment as distinct from the ordinary workers in industry on no other grounds than that they belong to a higher social status.

140. During the year under review, the Advisory Committee met 5 times and closely followed the progress of the Apprentice Scheme for which the grateful appreciation of this Department is due to the Committee.

141. During the year under review, negotiations were in progress with the mills in Sholapur for the introduction of the Apprentice Scheme in that city. It is gratifying to state that as a result of discussion by the Department with the mills, 5 mills in Sholapur have amongst themselves agreed to accept about 50 apprentices per annum and otherwise co-operate in giving the Scheme a trial at Sholapur. As the decision of the mills to co-operate was not received sufficiently in time for approaching Government for necessary financial provision in the current year's budget, it is proposed that the Scheme should be introduced with effect from July 1939 provided of course necessary funds are available.

ABBOTT-WOOD REPORT ON VOCATIONAL EDUCATION IN INDIA.

142. During the year under review, this Department submitted to Government a comprehensive Note on the question of reconstruction and remodelling of technical and industrial education in this Province and on the recommendations made in the Abbott-Wood Report on Vocational Education in India.

VOCATIONAL TRAINING COMMITTEE.

143. Towards the latter part of the year under review, Government appointed a Committee to consider the Wardha Scheme of Education, the Abbott-Wood Report on vocational education and training in India and to suggest steps to be taken to eradicate the present excessively bookish character of the existing primary and secondary education. The Director of Industries as well as the Deputy Director of Industries were members of this Committee.

CHAPTER IX.

MINES AND MINERALS.

144. As usual, the annual statistics relating to Mines and Minerals in the Province were collected by the Department from the various District Magistrates and the Agents to the Governor General and a consolidated return of the same was submitted to Government and the Director, Geological Survey of India.

During the year under report prospecting licenses were granted in 3 cases for manganese ore, and mining leases in 2 cases for the same mineral.

This Department deals with enquiries received from the public in connection with minerals, places of their occurrence, firms dealing in them, etc. The number of enquiries dealt with during the year under report was 53 as against 35 in the last year.

145. **Minerals in Ratnagiri District.**—At the request of this Department the Geological Survey of India decided to undertake a further survey of the southern part of the Ratnagiri District. At the request of the Geological Survey of India Dr. Patel of this Department, was deputed to show to the Geologist of that Department the different areas where Dr. Patel had located economic minerals, viz., felspar, chromite, magnetic sand, sandstone, garnate, etc. The officer in question has completed the survey and will submit his report in due course.

146. **Magnetic Sand.**—As mentioned in the last year's report the investigation on magnetic sand at Ratnagiri was discontinued during the year so far as separation of ilmenite was concerned. During the year under report a new development had taken place in this connection. The sand in question as such was proved by Dr. Patel, in co-operation with a big concern manufacturing welded steel pipes, to be useful in the production of electrodes for welding purposes.

CHAPTER X.

FISHERIES.

MARINE FISHERIES.

Introduction of Power-propelled Launches.

147. **Departmental Launches.**—The number of launches owned by the Department was four as against three in the preceding year.

The success that has attended the Government of Bombay's experiment to popularise the use of motor launches was evident from the increasing number of applications received from private individuals for financial assistance. A loan of Rs. 23,000 was sanctioned by Government in accordance with Government Resolution, Revenue Department,

No. 3837/33, dated March 23, 1937, to Messrs. Parkar & Co. of Devgad who had also been granted a loan in 1936, in respect of which they have regularly paid the instalments. The fresh loan was granted to the same company as it was felt that the ownership of second vessel by them would enable them to develop and expand their trade on more organised lines.

The construction of the " Lord Brabourne " marked an important step as it was the first craft to be built for this Department by the Royal Indian Navy at its dockyard in Bombay. The vessel is a great improvement on its predecessors and incorporates several new features in its design and equipment.

The construction of the vessel embodies the fruit of experience gained from the operation of other Government as well as private launches. Its two most outstanding features are the installation of the engine amid ships and the provision of increased sleeping accommodation for the crew. The dimensions of the vessel are 45′ length, 11′ breadth and depth 5′-6″. It has a cruiser stern. This is the first launch on which dry ice will be used for the transport of fish and its holds have been specially insulated by the Dry Ice Corporation for the purpose.

Other welcome features are the provision of large oil and water tanks to hold the entire quantity of fuel oil and water needed for one voyage lasting about 70 hours. Another feature in which the new launch surpasses the old vessels is its equipment of electrical lighting. The vessel is equipped with 57 B. H. P. Gardner engine. She has a registered tonnage of 7·83 and her speed at 1000 r. p. m. is 8·23 knots.

The delay in the arrival of the engine in India was responsible for the postponement of the date of delivery to the first week of February, when sufficient scope could not be found for it as the fishing season on the Kanara coast had practically ended then.

148. **Benefits of Motor Boats.**—During the year under review the fishermen at the ports at which the launches operated realised, as in the previous year better prices for their fish and took keener interest in their trade. The benefits arising from the use of the launches have generally led to increased activity at the fishing sites on the southern part of the coast of our Province. The presence of the launches, specially the ready cash payments made by the launch-owners stimulated fishermen of the Madras Presidency to invade our fishing fields. Fishermen from Malpe operated last year six " rampan " nets (shore seiners) at Gangavali, Chendia, Kodar and Bingi. The presence of the Madras fishermen on our coast has, however, been undoubtedly useful as it has encouraged fishermen at Baitkhol to use " rampan " nets which were formerly unknown there. Baitkhol is noted for its large catches and there is no doubt that the use of the " rampan " will not only secure large catches but also produce better financial results.

Further evidence of the utility of motor launches for the transport of fish was furnished by the construction of the " Chandtara ". This vessel was constructed by a fish merchant at Vijaydurg on the Ratnagiri coast. She was built by local carpenters and the hull was brought to Bombay for the installation of a 52 B. H. P. Ruston Hornsby diesel engine. The dimensions of the vessel are length 46·9′ and breadth 10½′. This brings the total number of vessels to 8.

There was no change in regard to the field of operation of the launches, except that voyages were made to two new places, viz., Daman and Dahanu. This was so far as the north was concerned. The voyages showed that these two places are rich fishing fields and if the launches had not to go there, this fish would not have reached the Bombay market. The fishermen welcomed the presence of the launches as they helped to take away the catch at sea, part of which they would have, otherwise, sold fresh and the rest taken to be cured. So far as the southern part of the coast was concerned the launches operated as far as Chendia. The bulk of the catch was obtained from Karwar and Chendia which places are about 270 and 290 miles from Bombay.

This fish would not have come to Bombay without the launches but would have gone to the fish curing yards thereby reducing a first class edible commodity to a third rate product lacking in food value. Fish either salted or converted into manure would have fetched about rupees five or six thousand whereas in the fresh state it realised in Bombay about Rs. 60,000. This is an immense gain to the fish trade.

149. **Fishing Season and the Fish brought by Launches.**—The fishing season, which begins in September and lasts up to about the end of April, was again slack. This is unusual as three consecutive slack seasons have been experienced. The slackness of the fishing season is testified to by the diminished quantity of salt issued at the fish curing yards. This was the condition all along the coast, not merely at the fishing fields at Bassein, Palgarh, Daman, Dahanu and Div in the north but also on the Ratnagiri and Kanara coast in the south. Despite the indifferent fishing season the quantity of fish landed by four launches of this department was larger than in the previous year amounting to 5,17,964 lbs. as against 4,04,679 lbs. in 1936–37. Two private launches brought between them about 2,15,980 lbs. of fish. The total quantity of fish brought by five launches was 7,33,944 lbs. About 72,800 lbs. of fish frozen at Malwan were brought to Bombay by steamer. The Bombay Steam Navigation Company's and Indian Co-operative Navigation Company's steamers also imported 47,720 lbs. of frozen fish from Karachi, Veraval, Vijaydurg and Uran. The statistics of the quantity and types of fish brought by launches of the department are set forth in Appendix E. It will be seen therefrom that the fishing season gradually slackens from February, from when onwards there is a progressive decline in the quantity of fish

transported. This does not mean that fish is not available but the fact is that fish at this time of the year start migrating into deeper waters, where the fishermen do not venture at present owing to the inadequacy of their gear and the lack of proper storage facilities.

150. **Need for Modern Fishing Methods.**—The lines on which fishing industry in this Province could be further developed were described in detail in paragraph 150 of the last year's Annual Report. A scheme to bring out a master fisherman and to introduce up-to-date methods of fishing has been submitted to Government. If the scheme is accepted, it is felt that the experiment will afford an opportunity to our local fishermen to learn improved methods of fishing and at the same time to enable them to catch more fish.

151. **Fish Landing Sites.**—The lack of a suitable landing site for the use of fishing launches is a serious drawback which militates against the expeditious landing of fish and its despatch to the markets in the city. This is bound to hamper to a great extent the successful and smooth progress of the work of fisheries development. The Sassoon Dock was dredged last year, and the dredging of the basin was helpful inasmuch as it enabled the vessels to enter and leave the place more freely. The difficulties have not, however, been entirely removed, as the launches cannot enter and leave the basin at all stages of the tide specially at the time of the new and full moon. The trade in sand and bricks at Sassoon Dock is so great that the space available is too limited for the fishing craft. Even the space on the wharf where formerly fish was landed is now gradually being taken up by sand and brick heaps.

The existence of suitable landing sites is the first indispensible basis of any attempt to improve and develop the fishing trade. Bombay lacks suitable sites for the landing of fish. Even in the fishing villages there is no easy and rapid approach to the landing site, with the result that when the tide is out the fishermen have to run up and down between the boats and the beach carrying loads of fish on their heads. This drawback can only be overcome by the provision of regular fishing harbours and suitable landing sites. The more extended use of launches on our coast will bring this problem to the forefront. Difficulty is already being experienced on this score, and if the launches must prove the success, they are designed to be, it is imperative that the question of the provision of suitable sites and adequate facilities should not be delayed much longer. Fish, as is well-known, is the most perishable of all foods and should receive the closest attention and preferential treatment. Rapid landing of fish and its distribution are of vital factors in the development of fishing industry.

A scheme is, however, under the consideration of the Bombay Port Trust for the acquisition of some land in the Gun Carriage Basin area for the use of the fishing industry. The scheme envisages the construction of a breakwater and the dredging of the basin, so as to permit of its use

for the fish trade all the year round. The adoption of the scheme will to a great extent overcome the difficulties now being experienced in regard to the speedy landing and disposal of fish.

152. **Training of Apprentices.**—Further progress was made in regard to the scheme to train apprentices to handle and operate the launches. The number of apprentices at the beginning of the year was seven, of whom one passed the examination and obtained the necessary certificate from the Mercantile Marine Department. Of these apprentices two are in regular employment, one being in sole charge of the vessel " Lady Sykes " and the other of the " Lord Brabourne " both as mechanics. The number of apprentices due to appear for the aforesaid examination this year is four. The work of the apprentices has been quite satisfactory. They have shown constant zeal and devotion to duty throughout and there is no doubt that this scheme will eventually benefit the fishermen, as they will be able to recruit from their own community, youths for employment on the launches. Experience has shown that the work of a mechanic aboard the fishing vessel is extremely arduous and fatiguing and calls for great powers of endurance. Ordinary mechanics are not able to stand up to the strain of continuous service at sea, while youths of fishing community are best suited for the purpose in virtue of the hardened characteristics of their race.

153. **Ice Factories.**—The year under review witnessed the completion of two ice factories; one of dry ice in Bombay and the other of wet ice at Chendia. The dry ice factory was completed only towards the end of the fishing season so that it was not possible to experiment with the use of dry ice as a refrigerent for fish in the fish holds of the new vessel " Lord Brabourne ".

The wet ice factory at Chendia is a two-ton plant. The factory had been constructed in order to serve the launches. The owner used the entire output, however, to preserve fish which he exported to Belgaum, Dharwar and Hubli and other places in the interior. It is owing entirely to the availability of ice at Chendia and the presence of rapid bus transport that fish is now exported from the coastal regions to places in the interior which formerly never had a supply of fish.

154. **Marine Biological Research.**—The primary need for the establishment of a marine biological station and an aquarium in Bombay for research on fisheries was advocated in the press. A number of articles by acknowledged authorities on fisheries appeared in various newspapers. They were all agreed that early steps should be taken by the maritime provinces in India to provide facilities for research in marine biology.

I concur with the view that the establishment of a marine biological station is a prime necessity in order to arrive at a better understanding of problems connected with our fisheries.

FISH CURING YARDS.

155. **Number of Yards.**—The number of fish curing yards at which business was transacted during the year under review was 32, as compared with 31 in the previous year. The increase was due to the yard at Baitkhol being re-opened during the year.

156. **Fish Cured at the Yards.**—The principal kinds of fish cured at the yards consisted of mackerel (bangda), mushi, shengala, ghol, khawli, gegar, pedwa, dhodi, karmat, wagli, surmai and pomfrets (hulva).

The season started slightly earlier than in the previous year on the Ratnagiri coast whereas on the Kanara coast, it commenced about the usual period. Karmat and dhodi which are usually available from April to August did not at all visit the coast. The shingala and ghol which come later in the season, were not to be had in as plentiful a quantity as in the previous year. Shingala was found in the Vijayadurg creek in fairly large quantities, and the fishermen had a good turnover. Such large quantities of fish were brought to be cured at the yard in the early part of the season that they exceeded the available supply of salt, stocks of which had to be imported from the Talasil yard to meet the demand. There was a marked decline in the catches of karli, iswan and surmai, abundant quantities of which had been caught in the previous year but were not available in such abundance this year. Surmai is a special favourite with the public and the dearth of supply caused its price to rise up to Rs.1-4-0 per specimen from 10 annas in the previous year.

The mackerel season commenced earlier this year in September and unexpectedly terminated in February. Big catches were landed at Majali, Karwar and Chendia in the Kanara district. The catches at Malwan and Vengurla were small.

The irregularity of the movement of sardine along our coast is well-known and was again borne out during the year under review, when insignificant quantities were caught. The fish is chiefly used on our coast for manure and its scarcity was responsible for the price of sardine manure soaring to Rs. 20 for 20 maunds from Rs. 10 in the previous year.

The most striking characteristic of the year under review was the gradual decrease in catches of all varieties of fish brought to the yards. This phenomenon was also noticed in the two previous years, and it is difficult to account for the diminution in the catches in the absence of any systematic records. It must, however, be admitted that some quantity of the fish which would normally have gone into the fish curing yards was brought to Bombay by the launches, but this is only a fraction of the large amount that is cured at the yards. This view may be borne out by the fact that even those yards not visited by the launches also recorded diminished sales of salt.

Some quantity of fish is also carried away by the buses which ply from the coastal ports to the interior. Fish was carried from Malwan, Deobag, Vengurla, Karwar and Chendia to centres like Kolhapur, Belgaum, Poona, Sholapur, Satara and Hubli where formerly fish used to be very scarce, if not almost unavailable.

Further, the concession under the terms of the Gandhi-Irwin pact, permits the fishermen to manufacture salt for personal use. Several fish curers at Mumbri, Mitbao, Achra, Talasil and Kochra made free use of salt earth during the year for curing fish and, therefore, did not visit the yards. The result is that the sales of salt at these yards have considerably diminished.

The sale of salt at any yard furnishes no criterion whatsoever of the condition of the fishing season as it bears no relation to the quantity of fish available. Much depends on the skill of the fishermen and the types of nets they employ. An instance of the unenterprising methods of our fishermen is furnished by the example of the fishermen at Kumta and Gangawali. These fishermen, who use the " rampan " net only, discontinued fishing operation in November 1937, when the quantity of salt issued at the two yards stood at 422 and 390 maunds. Soon after they had stopped operations, fishermen from Malpe and Mangalore appeared on the scene of those yards, using other types of nets. The large quantities of fish they caught may be gauged from the fact that by March 1938 when they were still fishing, the sales of salt at Kumta and Gangawali had risen from 422 and 390 maunds to 858 and 1003 maunds.

157. **Transactions.**—(*a*) During the twelve months ended on March 31, 1938, a total quantity of 210,680 maunds of fresh fish was brought to the yards. 59,269 maunds and 20 seers of salt were issued for curing fish, 35,814 maunds being issued in the yards in the Ratnagiri district and 23,455 maunds in the yards in the Kanara district as against 61,236 maunds in the previous year. The quantity of cured fish removed from the yards was 156,203 maunds.

32,400 maunds of salt were indented from Uran for the Ratnagiri yards and 26,463 maunds from Sanikatta for the Kanara yards.

The stock of salt at the 31 yards at the beginning of the year was 62,026 maunds and at the close at 32 yards 58,648 maunds.

(*b*) Some fishermen of Boria, Jaigad, Ratnagiri and Manki availed themselves of the concession of taking non-duty paid salt from their respective fish curing yards to preserve their catch at sea. The quantity of salt issued from the above yards was 1,064 maunds, i.e., 1,025 maunds in the Ratnagiri district and 39 maunds in the Kanara district as against 675 maunds in the previous year. The increase is due to the concession granted by the Collector of Salt Revenue to the fishermen to obtain the necessary permits a day previous so that they could take advantage of the

tide the following day and leave port early. This quantity is included in the figures shown in sub-paragraphs (*a*) above.

(*c*) 1,798 maunds of salt were issued to agriculturists free of duty from the fish curing yards for manurial purposes. The issue price of denatured salt for manurial purposes remained unchanged namely 8 annas per maund.

(*d*) The total quantity of fish brought to the yards during the 12 months was 210,680 maunds.

158. **Opening of New Yards.**—The Baitkhol fish curing yard was re-opened during the year. It had been closed by this department in 1936 owing to the poor sales of salt, as a result of the discontinuance of the wet process of curing fish at the yard, under the orders of the Collector of Salt Revenue, No. 102–2, dated April 21, 1935.

Personal inquiries by the Fisheries Officer at Baitkhol prior to the re-opening of the yard showed that one of the main reasons why the yard had been closed, was the offensive smell from craft from Goa which came to the yard to have fish cured. The craft usually remained for three or four days in the creek before the fishermen attended to the fish, with the result that some of it decomposed and gave rise to the smell. The smell was further aggravated by the curing of the fish on the bare earth, so that the liquid discharged in the process of curing fish by the wet process was absorbed by the soil, which being impregnated with the foul water caused an offensive effluvia about the place.

Government in their Resolution, General Department, No. 1960/33, dated October 21, 1937, sanctioned the re-opening of the yard and the resumption of the wet process of curing fish, provided however, that this was done on cement concrete platforms. Government also sanctioned Rs. 800 for the latter purpose.

The yard could not be opened immediately as the cement platforms were not ready. The fish curers pleaded, however, that they had incurred considerable expenditure on the purchase of nets and other fishing gear and that owing to the yard still being closed they were suffering pecuniarily. The only remedy available was to open the yard. This was done on December 11, 1937, but this department laid down that only the dry process would be permitted, pending the construction of the cement concrete platforms.

159. **Offences.**—Illicit removal of non-duty paid salt was detected at the fish curing yard at Achra. The case was investigated by the officers of the Salt Department and the curer was penalised by being debarred from entering the fish curing yards for one year.

160. **Leave Reserves.**—A factor that has hampered the efficient administration of the yards is the inadequacy of the staff. There are no leave reserves at present and great difficulty is encountered in the efficient administration of the yards, when members of the staff apply for

leave. The need to augment the staff was urged on Government during the year, and the matter is pending.

161. **Reforms.**—The propaganda which the Fisheries Inspector has been conducting has led to the realisation among the fishermen of the desirability of curing fish in accordance with sanitary principles. Evidence of the awakening is supplied by the applications addressed to this department by the fish curers from Bhatkal, Murdeshwar, Baitkhol, Chendia and Majali, for permission to construct cement platforms and tanks for the curing of fish. A start has already been made at Baitkhol where the construction of cement platforms has been undertaken.

162. **Inspection.**—The Fisheries Inspector was out on tour of the yards for 176 days. He held meetings at Mumbri, Mitbao, Achra, Talasil, Malwan, Deobag, Mobar, Vengurla, Majali, Karwar, Bingi, Chendia, Ankola, Murdeshwar and Shirali. The advantages of forming co-operative societies were explained to the fishermen.

163. **Yard Finances.**—Appendix " F " gives a pro-forma account of the transactions at the various fish curing yards during the year ended on March 31.

Appendix " G " contains a detailed account of the transactions.

The estimate pertaining to the administration of the fish curing yards for the year had reckoned on a possible sale of 78,000 maunds of salt, but the quantity actually used was 59,269 maunds, which was due to the slack fishing season.

The issue price of salt for curing fish remained unchanged during the year, viz., Re. 1 per maund. The net loss from the working of the yards during the period under review was Rs. 4,912.

FRESH WATER FISHERIES.

164. The Department acquired some sheets of water during the year. Some of these were stocked with fingerlings of local fishes and of varieties imported from Patna and Madras.

165. **Source of Supply of Fingerlings.**—The development of fresh water fisheries on a large scale is not practicable until there is a source near at hand in the Province for the supply of fry or fingerlings of such quick growing fish as " catla ", thereby eliminating the need for their importation from elsewhere in India. Surveys conducted so far in the rivers of Nasik and Poona districts have failed to reveal the presence of " catla " or a supply of fingerlings of other carps suited for stocking inland waters. As long as there is no source of supply of such fingerlings in the Province the progress of the fresh water fisheries development is bound to be slow. In order to overcome this difficulty steps are being

taken to stock the Powai lake in Bombay and the Tata lakes (Walwan) at Lonavala with the fry of fish got from Patna. It is confidently expected that the fish will breed and the lakes will serve as a source of supply to stock sheets of water elsewhere.

The hopes entertained last year of the plentiful availability of " Lates " an estaurine fish seem to have been ill-founded, as the fingerlings of the fish were not to be had in such abundance as was expected.

The search disclosed, however, the presence in abundant quantities of fry of murrels in the month of May in the Moola Mutha river at Poona. The murrel is an excellent fish for edible purposes and attains a good size and weight. There is a great demand for murrels in Poona and the adjacent countryside. Unfortunately the discovery of a source of supply of murrel fingerlings was made too late last year, so that it was not possible to arrange for sheets of water where they might be introduced. Two ponds have since been acquired and it is proposed to liberate fry in them between the months of April and May. It will only be after the lapse of a year after the liberation of the fry that it will be possible to determine the commercial possibilities of stocking ponds and tanks with murrel fry.

Fingerlings of mullets and scatophagus, both of which are rich food fishes are available in our estuaries and backwaters. Attempts were made to accustom them to a fresh water habitat, but the experiment was unsuccessful. The experiment has not, however, been abandoned and the problem is being tackled from a fresh angle.

166. **Stocking of Ponds—Gourami.**—A consignment of fingerlings was brought from Madras and the entire quantity was introduced in a tank at Bandra in April 1937. The fish, which were then about 3" long had grown to 15" in March 1938. They seem to have attained their full growth and they are expected to breed soon.

The fingerlings of etroplus which had been ordered from Madras in September 1936, and then introduced in a number of wells in the suburban area have thrived. In one of the wells at Vile Parle they have bred and measures are being taken to remove some of the fish and to use them to stock other wells.

Fry of Catla and Carp fishes which had been imported from Patna and liberated in a pond at Bhyandar have been used to stock the Powai lake, as the place is expected to provide a better habitat for breeding purposes. Probability of these fishes thriving in our waters may be gauged from the fact that the fry of catla which were about ½" long when brought from Patna in July 1936 had grown to about 12" in length by May 1937, when the fish was introduced into the Powai lake.

Fingerlings of catla which at the time of introduction into the Bandra pond on September 20, 1936, were 3" in length measured about 2 feet in

March 1938. It is only after the monsoon that it will be possible to know whether the fish has bred ; for, confined or still water is a factor unfavourable to their breeding. Conditions in the Bandra pond, however, are different during the monsoon when the water is in a constant state of flux and can thus provide the necessary stimulus for breeding.

The tank in the Jail compound at Thana was placed at the disposal of this department by the Jail authorities in June 1937. The tank which admeasures about 4½ acres was stocked by this department with 800 fingerlings of megalops and 80 fingerlings of lates. Eight months later the fishing rights in the tank were auctioned, the amount realised being Rs. 100. This is the largest amount ever derived from the disposal of the fishing rights and it is expected that the yield next year will be even greater. The fishing rights in the tanks have never been auctioned regularly every year and whenever they had been in the past by the jail authorities the yield varied from Rs. 25 to Rs. 50. This was from the sale of fish that had travelled up to the tank from the sea.

167. **Help to Angling Association.**—The angling association, as in the previous year, sought the assistance of this department in its stocking operation at the Powai lake. The bulk of the fry (8,000) ordered had been liberated in the Powai lake, the remaining portion of the consignment, about 4,000 fry, had been liberated in a pond adjacent to the lake. This had been done as the pond did not contain any predacious fish, so that after the fry had got over the helpless period of their existence they might be better able to take care of themselves when introduced into the lake, the fauna of which is not known. The fry in the small pond were introduced in July 1937 from where about 2,000 fish were recovered. The fry of catla had grown in nine months from one inch to 15 inches which is indeed a remarkable rate of growth.

The department also collected and liberated in the Powai lake at the request of the Association, 2,000 fingerlings of megalops. This fish, as was recorded in the last year's report is a marine species, young ones of which are plentiful during the monsoon in depressions in fields lying close to the sea. The only drawback of this fish, which otherwise possesses undoubtedly fine characteristics, is its unsuitability for the table. It is full of bones and not likely to commend itself to fish eaters.

168. **Bureau of Fisheries Information.**—There has been a steady expansion in the volume of inquiries attended to by the Fisheries section. Interviews were granted to a number of individuals, and information was supplied on a variety of subjects. Information which lay within the slender resources of the section was readily given. The inadequacy of the section was made obvious in regard to inquiries on technological subjects and fishery statistics. No marine biological research is being conducted by the fisheries section, with the result that whenever any information is sought on technological or marine biological subjects the

inquiry has to be re-addressed to other provinces and countries where work is being done on them.

Such information as the cost of the launches, the designs of boats, the types of engines, working cost, profitable fishing fields, statistics of fish brought by the launches, etc. which was within the reach of this section was readily supplied.

Inquiries in regard to the launches were received from the Governments of Bengal, and Baroda, which have recently appointed Fisheries Experts to develop their respective fisheries. The required information was given.

Much more useful work could be done by this section, but unfortunately, owing to handicaps arising from a limited staff, it has not been possible for this section to enlarge the present sphere of its activities.

CHAPTER XI.

WEIGHTS AND MEASURES SECTION.

169. The Bombay Weights and Measures Act remained in force in the whole of the Province during the year under report. The work of reverification was started in Bombay City and the eight districts in which the Act came into force on 1st August 1935 and in the remaining districts the work of first verification was completed on 28th February 1938 and the work of reverification was started on 1st March 1938.

170. **Staff.**—During the year under report the administrative and supervising as well as the inspecting and clerical staffs of the Weights and Measures Section remained the same as in the previous year.

171. **Equipment and Laboratories**—(a) **Bombay City.**—The Traders' Weights and Measures Laboratory worked at full pressure and the Standards Laboratory continued to work satisfactorily during the year under report.

(b) **Districts.**—The Traders' Weights and Measures Laboratories in the districts also continued to work satisfactorily. The secondary standards kept in the districts were well maintained.

172. **Manner of Enforcement of the Act—Co-operation of Local Bodies.**—The Act was enforced in the various districts with the co-operation of the various Municipalities and District Local Boards as in the previous year.

During the year under review the Bombay Suburban District Local Board and the Thana Municipality were allowed to close down their Weights and Measures Departments as the income from their areas was not sufficient to make their inspecting units self-supporting. Their

weights and measures equipments were taken over by Government. The entire area under the jurisdiction of the above local bodies is now in the charge of the Government Inspectors of Weights and Measures. The Bijapur Municipality was also exempted from the operation of the Act on account of the same reasons.

During the year under report the Model Regulations prescribing the powers and duties of the local body Inspectors under Government Resolution, General Department, No. 9518, dated 15th July 1936, were adopted by some more of the co-operating local bodies.

The work of verification and stamping was carried out in all the parts of the Province by the Government and the local body Inspectors side by side according to the arrangements outlined in the last year's Report, quite satisfactorily and in complete harmony.

173. **Prosecutions.**—During the year under report the Inspectors of Weights and Measures in the districts and Bombay city put up about 147 cases for prosecuting the traders for the use of unauthorised weights, measures and scales. Great care was taken to sanction prosecutions only in the case of those persons who had been repeatedly warned but who continued to ignore the law. Fifty-two such cases were duly sanctioned, out of which convictions were obtained in 39 cases. Two cases were withdrawn and the rest remained pending for trial in the Court. In Bombay city, two cases of forgery of Government stamps were detected during the year. In one case the offender was prosecuted successfully before the Chief Presidency Magistrate, who found him guilty and sentenced him to one month's rigorous imprisonment and a fine of Rs. 300. The other case remained pending for trial in the Chief Presidency Magistrate's Court.

In Poona city also one case of similar nature was detected and the case was duly filed in the Court of the Additional District Magistrate, Poona, but before the offender could be apprehended by the Police he absconded to some unknown destination and therefore the case had to be withdrawn.

174. **Amendment of the Act and the Rules.**—During the year under report certain sections of the Act and some of the Rules were suitably amended in the light of the experience gained in the interests of the members of the trading public and the local bodies who co-operated with the Government in the enforcement of the Act.

The proposals for new rules for new and additional denominations recognised last year were submitted to Government and were still under their consideration during the year. The fees for the new and additional denominations were prescribed during the year.

175. **Extent of the Enforcement of the Act.**—During the year under report about 2,72,000 units of weights, measures and scales were verified and stamped for the first time making a total of about

21,30,600 units, verified and stamped since the introduction of the Act. The total number of all units of weights and measures reverified during the year amounted to 3,91,716. Besides this, work in connection with inspection of traders' premises and surprise visits to them were carried out by the Inspectors of Weights and Measures throughout the Province. The figures quoted show that the Act was enforced effectively all over the Province.

During the year under report, Government of Bombay extended the application of the Act to all the Government Departments which have dealings with the public for the purchase or sale of articles by weight or measure. The Government of India also agreed to the application of the Act to the Salt Department.

176. **General.**—During the year the Honourable Ministers for Local Self-Government and Public Health with their Parliamentary Secretaries paid a visit to the Weights and Measures Laboratories and showed keen interest in the work of the Section. The members of the Imperial Council of Industrial Research composed of the Directors of Industries of all the Provinces and Indian States also paid a visit to the Weights and Measures Laboratories while the Council was in session in Bombay.

A number of enquiries like last year was received from various Indian States and other Provincial Governments about the system of weights, measures, weighing and measuring instruments adopted and the working of the Act in this Province and were dealt with. The Governments of Ceylon, Hyderabad, and Jodhpur deputed their officials for necessary training in this Section and they were given required facilities to acquaint themselves with the working of the Act in this Province.

The Senior Marketing Officer of the Government of Bengal also paid a visit to the Laboratories and acquainted himself with the working of the Act in this Province.

177. **Expenditure.**—The receipts and expenditure in connection with the enforcement of the Act during the financial year 1937-38 and during the last three previous years was as under :—

Year.	Recurring and non-recurring expenditure including Sind.
	Rs.
1934-35	97,924
1935-36	2,31,606

Year.	Recurring and non-recurring expenditure excluding Sind.
	Rs.
1936-37	1,49,145
1937-38	1,56,818

In addition to this expenditure, the recurring and non-recurring expenditure incurred by the local bodies in this Province for the similar periods is given below :—

Year.	Recurring and non-recurring expenditure. (The latter includes only 1/10th of non-recurring expenditure).
	Rs.
1934-35	*Nil.*
1935-36	27,677
1936-37	75,666
1937-38	Figures not yet available.

178. **Receipts.**—The receipts credited to Government on account of the verification and stamping work carried out by Government Inspectors and the receipts of local bodies under the Act during the last year and the previous two years are as under :—

Year.	Government Receipts.	Local Bodies' Receipts.
1934-35	*Nil.*	*Nil.*
1935-36	3,29,680	39,926
1936-37	5,40,000	49,541
1937-38	3,43,643	Not yet available.

The receipts of Government for the years 1935-36 and 1936-37 were higher than what can be expected in future. This is due to the fact that the majority of traders purchased new weights and measures instead of getting their old ones repaired, adjusted, verified and stamped under the Act. For the same reason and also for the reason that the work of verifying and stamping the weights, measures, etc. of manufacturers of and dealers in weights and measures has been reserved to Government Inspectors, the collections made by the Government Inspectors during the year under report are also higher than can be expected in future.

From the experience of the last year it is evident that the income of Government will continue to be on the high side during the first reverification period in view of the fact that the old weights and measures allowed under Rule 63 (2) during the first two years will be discarded by the traders during the reverification period and new weights and measures strictly complying with the Act will be bought by them from the manufacturers of and dealers in weights, measures, etc., the work in connection with which is reserved to Government Inspectors only. For the same reason, the income of local bodies will be on the low side. The exact idea of the income of Government and local bodies will be obtained only during the second reverification period.

CHAPTER XII.

WORK OF THE DEPARTMENT—MISCELLANEOUS.

179. Besides the activities described in the preceding Chapters, the Department does an appreciable amount of miscellaneous work and this is referred to in this Chapter.

WORK FOR OTHER DEPARTMENTS OF GOVERNMENT.

180. (1) One weaving master was deputed to Nasik Central Prison for putting Border loom in working order and suggesting improvements.

(2) The Dyeing Demonstrator, Belgaum, paid visits to the Belgaum Prison for introducing fast shade dyeing in the textile section of the Prison.

(3) The Assistant Superintendent, Government Hand Weaving Institute, Poona, visited the Yeravda Prison to put right the Tape loom and advise the authorities regarding weaving on it with a dobby provided with imitation gold threads.

(4) One detailed note explaining processes for polishing of Sari borders woven with gold threads was furnished to the Nasik Prison.

(5) Detailed advice with regard to the introduction of wool spinning work by hand was given to Belgaum Prison.

(6) The Assistant Superintendent, Government Hand Weaving Institute, Poona, was deputed to the Criminal Tribes Settlement, Bijapur, to introduce in the Textile Section of the Settlement improvements in hand sizing by the use of the Cottage Sizing Set designed by this Department.

(7) The question of fixing the quality and rates of Khaki Great coats and woollen clothing to be supplied by the Inspector General of Prisons, Bombay Presidency, Poona, to the Excise Department was referred to the Director of Industries and necessary advice was given to the Departments after examining the samples and rates of private tenderers.

(8) A dispute over the rates of cloths quoted by the Inspector General of Prisons, to the Superintendent, Bombay Printing and Stationery was settled by the Director on examination of the samples and rates quoted by other private tenderer.

(9) A dispute between the Medical Department and the Criminal Tribe Settlement over quality of the supply by the latter to the former of bed sheets and pillow cases was decided by this Department after a critical test of the samples.

(10) The Government Printing and Stationery Department sent to this Department samples of various articles, e.g., ink, cloths, typewriter oils, candles, gum, blotting papers, etc. received from the contractors along with approved samples of tender for test. The Department analysed all such articles whenever sent and furnished the Superintendent, Government Printing and Stationery with the results of test and opinion on the articles supplied.

(11) The operations at the Government Photo Zinco registry office at Poona in connection with the recovery of silver from hypobaths were conducted under the guidance of the Industrial Chemist of this Department.

(12) The Thana Prison was furnished with a test report on the candles manufactured by it.

(13) The Department also participated in the various activities relating to the Village Improvement scheme by deputing its technical staff to the various centres as required. Lectures on Cottage Industries were given by the staff with the aid of special portable weaving implements manufactured by the Department, with which the staff toured with the Village Uplift Van for propaganda and demonstration purposes in the Central Division and Southern Division according to the programmes scheduled by the Collectors. Similarly, arrangements, were made for the demonstration of mica, calico and aerograph printing work in different villages.

The villagers appeared to take keen interest in these activities of the Department and were furnished with all possible information followed by the practical demonstrations. The demonstration propaganda tour work is being continued.

ACTS, LEGISLATIVE PROPOSALS, ETC.

181. The undermentioned Bills, reports and proposals were referred to this Department for opinion during the year under review :—

(1) Income-tax Enquiry Report, 1936.

(2) Proposed legislation for registration of Trade Marks in India.

(3) A Bill to Aid in the prevention of strikes and lockouts and to promote amicable settlement in trade disputes in factories and other industrial establishments.

(4) A Bill to provide Bombay Presidency Swadeshi Products Test.

(5) The Indian Soft Coke Cess (Reconstitution of Committee) Bill.

(6) Collection of Statistics of employment of educated persons.

(7) Annual holidays with pay.

MISCELLANEOUS ACTIVITIES OF THE DIRECTOR OF INDUSTRIES.

182. During the year under review I was a member of the following special enquiry committees set up by Government :—

Electric Rates Committee.

Swadeshi Stores Purchase Committee.

Vocational Training Committee.

Dapuri Workshop Committee.

Power Alcohol Committee.

183. As regards the Swadeshi Stores Purchase Committee the Director of Industries was appointed a member and the Deputy Director of Industries Secretary to the Committee. All the clerical and secretarial work of the Committee was carried out by the office of the Director of Industries under the guidance of the Secretary which added much to the already heavy work of both. The committee concluded its labour and submitted its Report to Government towards the end of April last which is now under their consideration. The work of all the other above committees except that of the Electric Rates Committee is now complete and reports have been submitted to Government.

CONFERENCES, COMMITTEES, ETC.

184. **Industries Conference.**—The Ninth Industries Conference which was held at Lahore on 15th and 16th December 1937 was attended by the Honourable Mr. L. M. Patil, Minister for Industries, and myself as representatives of the Government of Bombay. The Conference reviewed the progress made under the scheme for the development of handloom industry. I pressed for the acceptance of a proposal made for the extension of the scheme up to 31st March 1941, and this was generally agreed to.

The second item on the agenda was "middle class unemployment", in connection with which discussion arose regarding the development of schemes of Apprenticeship. I stressed to the Conference the need for an Apprenticeship Act making it obligatory on every registered industrial establishment to accept a fixed number of apprentices under specified conditions. I also urged the Government of India to encourage vocational training and apprenticeship schemes by agreeing to bear a part of the expenditure of the Provincial Governments on these schemes, as is done by the Federal Government in the United States of America.

The third item on the agenda related to the question of publication of a handbook containing information regarding industrial and technical institutions in India including Indian States. It was pointed out to the

Conference that so far as this Government was concerned, the Department of Industries had already published a handbook of the kind referred to, copies of which will be exchanged by this Department with other Provincial Directors of Industries.

The fourth item was the consideration of the following matters arising out the proceedings of the third Session of the Industrial Research Council :—

(*a*) Industrial Surveys ;

(*b*) Establishment of Key Industries ; and

(*c*) General Scope of the Industrial Research Bureau.

As regards (*a*) it was decided that the Government of India should refer the matter to the provincial Governments asking them whether they would be prepared to conduct surveys of industries in their respective Provinces and supply the material to the Industrial Research Bureau for co-ordination and issue of All-India Survey Reports.

Speaking on the question of establishment of key industries which formed the 5th item of the agenda, I urged on the conference the advisability of appointing a committee to make a report to the Conference as regards the key industries which should be established in India together with the suggestion as to their location and a general plan. The Chairman, however, suggested that the matter should at first be officially referred to the Provinces and on receipt of their views the whole matter should be brought up before the next conference.

As regards item No. 6, the Director of Industries, Punjab, and I laid stress on the fact that the Industrial Research Bureau as at present organised and with its limited resources, could not be of any great utility. We, therefore, urged for the enlargement of the scope of the Bureau very considerably and for much larger sums of money to be spent on it by the Government of India.

185. **Cottage and other Small Scale Woollen Industries Committee.**—This Committee also met at Lahore on 17th December 1937 and I attended. The Committee decided on the amounts of grant to be allocated to each Province for the year 1938-39. Bombay was given Rs. 13,948. It was also decided that any savings or anticipated savings in the grant of any Province may be spent on approved proposals.

186. **The Excise Conference.**—I along with the Commissioner of Excise represented the local Government at the Exise Conference held at New Delhi on 8th to 10th November 1937. The agenda consisted of 21 subjects, and the proceedings of the Conference are summarised in a bulletin issued by the Government of India.

187. **Industrial Research Council.**—The third session of the Industrial Research Council was held in Bombay on 5th and 6th July 1937. I made the necessary arrangements for the visit of the Members of the Council to the local technological establishments. On behalf of the local Government I attended the session as the official representative and Mr. V. N. Chandavarkar was nominated by Government as a non-official member to attend the session.

The following is the summary of the views and information given by this Department on the various items on the agenda of the session.

(1) **Research on Oils and Soaps.**—So far as Bombay was concerned the work allocated was in connection with (*a*) citrous oils, viz., lime oil, orange oil and mandarine oil; and (*b*) cinnamon oil.

As regards citrous oils, work on lime oil had been finished and demonstration of the processes was given with the result that a small scale factory was actually brought into existence. This factory was able to export several hundred pounds of lime oil to Europe at remunerative prices during the last lime season.

(2) **Allocation of Prizes.**—The Department suggested that the scope of the papers should be extended, definite subjects should be prescribed and a Board of Referees constituted to judge the papers.

(3) **Research Programme of the Government Test House.**—No additions except those of a minor character should be made to the programme of work until the results of the current work are known and examined.

(4) **Improvement of Glass Furnaces.**—The suggestion of this Department was that after the furnace had been tried out final blue prints of the furnaces together with other relevant data should be circulated to the various provincial departments of Industries for information and action.

(5) **Accessories for Bangle Manufacture.**—It was generally agreed that the work should be undertaken on coloured red glass using sodium silinium as proposed by the Bureau. It was pointed out, however, that whatever decorating material is suggested should be tested out practically before the results are made known. Moreover, data should be given to show whether or not this decorating material can be made in India at competitive prices.

(6) **Casein Plastics.**—The Department suggested that one of the research chemists of the Bureau should study all available literature on the subject and submit a report on the casein plastics industry as carried on in different parts of the world.

(7) **Industrial Standardisation.**—So far as Bombay is concerned it was stated that there was no necessity for the Bureau to prepare any more specifications.

(8) **Publications of the Bureau.**—The Department agreed with the proposals of the Bureau for publishing a series of bulletins entitled "Bulletins of Indian Industrial Research" and another publication in the form of "Collected Technical Papers". A suggestion was made that there should be a Board of Editors to advise and guide in the matter of selection of suitable papers and materials for publications.

(9) **Industrial Surveys.**—The proposal made by the Bureau that the survey may be limited to the three industries suggested was agreed to. It was made clear that the other industries should also be covered in due course. In these surveys special attention should be paid to the question of raw materials used in industries. Subject to the approval of Government, the Department promised to give such help and assistance as is possible.

188. **Report on Scientific and Industrial Research, 1937-38.**—A list of industrial and scientific researches completed, in progress, or abandoned during the year in the various educational and scientific institutions in the Province was compiled for transmission to the Director of Industrial Research Bureau, New Delhi. The list was obtained from the institutions concerned.

EXHIBITIONS.

189. It is the policy of this Department to participate in the Industrial and Agricultural shows held in the Province and elsewhere.

A brief account of the activities of this Department in this respect in connection with the principal shows in which it participated is given below:—

(1) *The Third Indian Industries Fair, Bombay, held in May 1937.*—Stalls were organised for the demonstration of production of essential oils. Arrangements were made for the display of the articles produced by the students of various technical and industrial schools. Samples of work done by village tanners by crude methods and those after the introduction of improved methods by this Department were exhibited. Old and new weights and measures were also displayed.

(2) *The Ahmedabad District Agricultural Show, Sanand, held in December 1937.*—Stalls were organised for the demonstration of cotton and wool weaving, tanning and extraction of essential oils; arrangements were made for marketing of handloom products.

(3) *The Agricultural Cattle and Industrial Exhibition, Broach, held in January 1938.*—Practical demonstrations in hand weaving and tanning were given at this Show.

(4) *The Karnatak Agricultural Show, Belgaum, held in January 1938.*—The Department participated in this Show by holding demonstrations in handloom weaving, dyeing and printing, tanning, cane and bamboo work, glass and glass bangle manufacture by wood fuel small cottage furnaces on modern lines and methods of production, and demonstration in the production of essential oils.

A stall was allotted by this Department to Messrs. Greaves Cotton & Co. to demonstrate a small 56" r.s. Power loom of Livesey type and a 400 Hook double lift cylinder Jacquard machine worked by an individual electric motor.

Articles turned out by the various technical and industrial schools in the Province recognised and/or aided by the Department and weights and measures that were in vogue before the introduction of the Bombay Weights and Measures Act, 1932, and those allowed by the Act were displayed.

Stalls were also organised for the marketing of handloom products of the District Industrial Associations organised under the Marketing Scheme.

(5) *Khadi and Village Industries Exhibition, Haripura, held in February 1938.*—Demonstrations were conducted in carding and spinning of wool by improved, labour saving implements and in the production of essential oils.

(6) *The Village Industries Classes, Bandhan, organised by the District Agricultural and Village Improvement Show Committee, Palghar, in March 1938.*—Sari weaving with dobby work and production of tape on a loom designed by this Department were demonstrated.

(7) *The District Industrial Exhibition, Ratnagiri, organised by the workers of District Co-operative Institute, Ratnagiri, in collaboration with the representatives of other public bodies.*—Skins tanned by crude methods and those tanned and finished by improved methods taught by this Department were exhibited.

(8) *The Fourth Indian Industries Fair, Bombay, held in March 1938 to April 1938.*—Stalls were organised for the display of skins tanned by old and improved methods and for the marketing of handloom products of the different district industrial co-operative associations.

In addition to the above, intimation was received that an Exhibition called the Empire Exhibition would be organised in Glasgow during May to October 1938 where a women's handicraft section would be provided. This Department collected during the year under review various specimens of women's handicrafts from some of the local women's Associations which showed their willingness to participate in the Exhibition, such as Bai Avabai Framji Petit Parsi Girls' Orphanage, Bandra, the Gujarati Stree Mandal, Bombay, S. A. Women's Industrial Home, Bombay,

Women's Industrial Association, Bombay and the Kanara Brotherhood, Bombay. The articles collected were sent in February 1938 to the Trade Publicity Officer, London, for display in the Women's Section in the Empire Exhibition at Glasgow with a view to bring to light abroad the ladies art-craft work of this Province.

The Department also brought to the notice of the various commercial bodies exhibitions due to be held in other parts of India and abroad.

LIBRARY.

190. During the year, 354 new publications were added to the library attached to the Department, thus bringing the total number of books, publications, directories, etc. in the library to over 5,754. Besides, some 41 Indian and foreign journals on industrial and technical subjects were also being received. The library is open to the general public for reference and it is gratifying to note that the members of the public are taking full advantage of this arrangement.

The Department's library is the inspection centre in Bombay for Patent Office publication. About 1,625 volumes of these publications, dating back from the year 1920, are now lodged in it. On 22 occasions during the year, inspections of the English as well as Indian patent specifications were demanded by members of the public and were granted.

CHAPTER XIII.

STAFF AND EXPENDITURE.

STAFF.

191. I held the post of Director of Industries during the year under review. Mr. D. C. Gupta, B.Sc. (Eng.), Harvard, joined this Department as Deputy Director from 20th April 1937. Mr. N. M. Shah, Marketing Officer (Handloom Products) resigned his post on 1st September 1937 and the post remained vacant for the rest of the year. Mr. D. N. Savkur, Textile Designer (Handloom Products) looked after the work of Marketing Officer (Handloom Products) in addition to his own duties. The rest of the personnel of the Department continued to be the same as in the previous year.

TOURING.

192. During the year under review, I was out of Bombay for 53 days. My tours were chiefly in connection with the meetings of the ninth session of Industries Conference, Lahore, Excise Commissioners' Conference, Delhi, Cottage and Small Scale Woollen Industries' Committee, and inspection of the weaving and dyeing institutions of this Department, technical and industrial schools, the working of the Weights and Measures Section and annual visit which under the existing arrangements between the Governments of Bombay and Sind I have to make to Sind to supervise the activities of the Department of Industries of that Government.

Other Officers of this Department were also out of head-quarters in connection with their inspection tours and research work, etc. as detailed below :—

The Deputy Director was out of Bombay for 16 days, the Personal Assistant for 8 days, Industrial Engineer for 15 days, Industrial Chemist for 38 days, Fisheries Officer for 29 days, Marketing Officer (Handloom Products), who resigned from 1st September 1937, for 58 days, Textile Designer (Handloom Products) for 148 days, Tanning Expert for 56 days, the Warden for 38 days and the two Assistant Wardens for 88 days and 81 days respectively.

VISITS TO WORKS.

193. The Director, the Industrial Engineer, the Industrial Chemist and the Tanning Expert visited several concerns in connection with the investigations in hand and for rendering technical advice.

EXPENDITURE.

194. The expenditure incurred by the Department of Industries during the financial year 1937-38 and the four preceding years was as follows :—

	Rs.
1933-34	3,53,368
1934-35	3,43,564
1935-36	6,31,903
1936-37	6,20,043
1937-38	7,29,597

The figures of expenditure given above for 1937–38 are exclusive of the expenditure on such activities as the marketing of handloom products and the Woollen Scheme referred to in Chapter VII. These activities were financed from the funds placed at the disposal of the Government of Bombay by the Government of India and the expenditure under each of these activities was as under :—

	Rs.
(1) Marketing of Handloom Products ..	27,751
(2) Woollen Scheme	503

The total expenditure on all the activities of the Department for the year 1937–38 was, therefore, Rs. 7,57,851.

The total receipts during the year amounted to Rs. 4,20,230. Out of this sum, Rs. 3,43,643 were realised from the fees collected by the Government Inspectors of Weights and Measures and Rs. 60,509 from Fish Curing Yards. Receipts on account of the other activities of the Department amounted to Rs. 16,078.

CONCLUSION.

195. The activities of the Department expanded considerably during the period under review. A number of new schemes was formulated by the Department and sanctioned by Government. Some of these were put into effect while in respect of the others much preliminary work had to be done. Many and varied were the demands made on the time of the staff who were consequently subjected to unusually heavy strain of work. I am glad to be able to say that every member of the staff, gazetted and non-gazetted, discharged his duties efficiently with commendable zeal and devotion to duty.

P. B. ADVANI,
Director of Industries.

Bombay, 6th July 1938.

APPENDIX A.

Statement showing Membership, Capital, advances from Government and Loans from Bank, relating to different Associations under the Marketing Scheme for Handloom Products.

Name of the Association.	Membership as on		Share capital as on		Advances from Government for capital as on		Loan from Banks as on	
	31st March 1937.	31st March 1938.	31st March 1937.	31st March 1938.	31st March 1937.	31st March 1938.	31st March 1937.	31st March 1938.
			Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
North Central Divisional Industrial Co-operative Association Ltd., Ahmednagar ..	515	522	984 4 0	1,026 8 0	4,000 0 0	6,000 0 0	8,833 10 1	6,401 2 0
The Industrial Co-operative Association Ltd., Southern Division, Hubli	184	220	950 8 0	1,098 0 0	4,000 0 0	4,000 0 0	2,000 0 0	4,660 0 0
The Northern Divisional Industrial Co-operative Association Ltd., Ahmedabad ..	..	141	....	770 0 0	2,000 0 0	4,000 0 0	....	*Nil.*
The Industrial Co-operative Association Ltd., Yeola, (District Nasik)	..	251	....	5,000 0 0	....	*Nil.*	....	*Nil.*

APPENDIX B.

Statement showing Sales of raw materials, finished products, gross profit, etc., of different Associations under Marketing Scheme for Handloom Products.

Name of the Association.	Sales.						Gross Profit.	
	Raw materials.		Finished Products.		Total.			
	1936-37.	1937-38.	1936-37.	1937-38.	1936-37.	1937-38.	1936-37.	1937-38.
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
North Central Divisional Industrial Co-operative Association Ltd., Ahmednagar	26,772 8 1	11,368 3 3	22,823 13 0	17,696 4 0	49,596 5 1	29,064 7 3	2,240 12 3	1,709 12 0
The Industrial Co-operative Association Ltd., Southern Division, Hubli	14,530 0 6	16,404 7 6	3,979 9 9	9,124 6 9	18,509 10 3	25,528 14 3	489 14 3	1,082 0 0
The Northern Divisional Industrial Co-operative Association Ltd., Ahmedabad	....	3,099 4 0	....	4,992 5 3	....	8,091 9 3	....	393 13 3
The Industrial Co-operative Association Ltd., Yeola, (District Nasik) ..	....	1,023 5 6	....	571 5 6	....	1,594 11 0	....	69 13 9

APPENDIX C.

RECOGNISED TECHNICAL AND INDUSTRIAL SCHOOLS IN THE PROVINCE OF BOMBAY DURING THE YEAR 1937–1938.

		Grants sanctioned in 1937–38.	
		Grant-in-aid (Recurring).	Equipment grant (Non-recurring).
	(1) Schools run by Local Bodies receiving grants-in-aid from the Department of Industries.	Rs.	Rs. a. p.
1.	F. S. Parekh Technical Institute, Surat	5,880	373 8 0
2.	V. J. Municipal Technical School, Poona	2,398	....
3.	Local Board Industrial School, Satara	976	....
4.	Robertson School of Industry, Pandharpur	808	....
5.	King Edward VII Technical School, Dhulia	4,009	....
6.	School of Industry, Ratnagiri	6,915	....
7.	Municipal Technical School, Sholapur	2,304	440 0 0
	(2) Schools managed by Private Bodies receiving grant-in-aid from the Department of Industries.		
8.	Nadiad Industrial Institute, Nadiad	752	....
9.	Salvation Army Boys' Industrial School, Kaira	624	....
10.	I. P. Mission Industrial School, Borsad	813	....
11.	Vocational Training School, Ankleshwar	781	....
12.	Mahajan Home Industrial School, Surat	593	....
13.	A. R. Sonawala Industrial School, Bordi	1,050	....
14.	Mission Industrial School, Poona	960	36 5 0
15.	Sir D. M. Petit Industrial School, Sirur	808	....
16.	S. P. G. Mission Industrial School, Ahmednagar	1,670	....
17.	Salvation Army Boys' Industrial School, Ahmednagar ..	412	....
18.	St. Barnabas Industrial School, Manmad	1,226	....
19.	K. E. S. Topiwala Industrial School, Alibag	1,551	....
20.	American Mission School for the Blind, Bombay	1,010	....
21.	Textile Technical School, Parel, Bombay	1,383	....
22.	D. N. Poor Boys' Seminary Industrial School, Bombay ..	800	....
23.	American Wesleyan Mission Industrial School, Sanjan ..	140	....
24.	S. A. Willingdon Boys' Industrial Home, Bombay	950	....
		38,813	849 13 0

(3) Recognised Schools.

(a) Schools managed by Local Bodies not receiving grant-in-aid but recognised by the Department of Industries.

25. Thana School Board's Carpentry Class, Dahanu.
26. Thana School Board's Carpentry Class, Mokhada.
27. Thana School Board's Weaving Class, Khardi.

(b) Schools managed by Private Bodies not receiving grant-in-aid but recognised by the Department of Industries.

28. Jadhav College of Tailoring and Cutting, Poona.
29. Pandharpur Electric Supply Co.'s Wiremen's Class, Pandharpur.
30. Bai Avabai Framji Petit Parsi Girls' Orphanage Hand Weaving, Dyeing and Printing Classes, Bandra.
31. Radio Electric Co.'s Radio Class, Bombay.
32. The J. N. Petit Parsi Orphanage Carpentry Class, Bombay.
33. The Victoria Tailoring and Cutting College, Poona.
34. The Marine High School Industrial Classes, Novha.
35. The English Tailoring College, Bombay.
36. The Zarapkar Tailoring and Cutting College, Poona.
37. E. M. F. Radio Class, Bombay.
38. Goan Emigrants' Fund Committee's Wiremen's Class, Bombay.
39. R. G. Tahmankar's Success Electric Works Wiremen's Class, Ahmednagar.
40. The Bombay Technical Institute's Radio Class, Bombay.
*41. The Chicago Radio Institute, Bombay.
*42. The Parsi Technical and Industrial Institute (Carpentry and Wiremen's Classes), Surat.
*43. The Modern High School (Carpentry and Tailoring Classes), Ahmednagar.
*44. The Primary Handicrafts Classes, Girgaum, Bombay.

(c) Government Reformatory and Settlement Schools.

45. Yeravda Industrial School, Yeravda.
46. David Sassoon Industrial School, Matunga, Bombay.
47. Industrial Settlement School, Sholapur.
48. Industrial Settlement School, Bijapur.
49. Industrial Settlement School, Hubli.

*Recognised for the first time in 1937–38.

(4) Government Technical Schools directly controlled by the Director of Industries, Bombay.

50. The R. C. Technical Institute, Ahmedabad.

(5) Industrial Institutions and Classes recognised for Examinations only.

51. B. N. Gamadia Parsi Hunnershala, Bombay.
52. Byculla Marathi Central School, Byculla, Bombay.
53. Ghorapdeo Marathi Central School, Ghorapdeo, Bombay.
54. Khetwadi Marathi Central School, Khetwadi, Bombay.
55. Foras Road Marathi Central School, Foras Road, Bombay.
56. Lamington Road Gujarati School, Lamington Road, Bombay
57. Parel Marathi Central School, Parel, Bombay.
58. R. C. Mahim Urdu School, Mahim, Bombay.
59. Lady Jamshedji Road Marathi School, Dadar, Bombay.
60. Imamwada Central School, Imamwada, Bombay.

APPENDIX D.

COURSES OF INSTRUCTION RECOGNISED BY THE DEPARTMENT OF INDUSTRIES THROUGH THE COMMITTEE OF DIRECTION FOR TECHNICAL EDUCATION.

1. Higher Grade Mechanical Engineering.
2. Lower Grade Mechanical Engineering.
3. Automobile Engineering.
4. Higher Grade Textile Manufacture (Spinning and Weaving).
5. Lower Grade Textile Manufacture (Spinning and Weaving).
6. Carpentry Practice. Drawing and Wood Work Technology.
7. Trained Maistry Course.
8. Mechanical Apprentice Course.
9. Automobile Apprentice Course.
10. Handloom Weaving.
11. Typography (composition and printing).
12. Carpentry and Smithy (Agricultural).
13. Tailoring and Cutting.
14. Practical Tailoring.
15. I and II Class Electric Wiremen's Courses.
16. Radio Communication.
17. Leather Work.
18. Electroplating and Battery Charging.
19. Dyeing and Printing.
20. Wood turning and Lacquering.

APPENDIX E.

Statistics shewing the Different Varieties and Quantities of Fish (in lb.) brought by the Government Launches.

1937-38.

Variety of fish.	Names of the launches.				Total.
	Sir Frederick Sykes.	Lady Sykes.	Lady Brabourne.	Lord Brabourne.	
	Lbs.	Lbs.	Lbs	Lbs.	
Towar	....	....	1,348	....	1,348
Surmai	....	3,140	19,345	3,230	25,715
Bhing	....	420	1,341	2,300	4,061
Salmon (Rawas) ..	....	14	58	75	147
Karli	....	....	715	8,800	9,515
Black Pomfrets (Hulva) ..	....	231	1,735	4,340	6,306
Ghol	....	3,240	9,490	3,430	16,160
Dagol	....	1,600	2,525	20	4,145
Mackerel (Bangda) ..	41,150	66,822	243,550	5,000	356,522
Sardines (Tarli) ..	....	....	6,560	500	7,060
Pedwa	300	760	5,900	4,000	10,960
Datali	....	....	120	470	590
Tunny (Kupe) ..	....	....	235	10	245
Sakla	....	....	130	....	130
Cat-fish (Shingala) ..	....	....	180	200	380
Cock-up (Khajuri) ..	....	....	25	....	25
White Pomfrets (Sarga) ..	18,392	5,090	3,395	435	27,312
Dara	....	....	13,100	23,725	36,825
Mixed fish	....	....	9,885	633	10,518
Total ..	59,842	81,317	319,637	57,168	517,964

APPENDIX F.

Pro forma *Account of the Fish-curing Yards for the year ended on March* 31, 1938.

Expenditure.			Receipt.		
	Rs. a. p.	Rs. a. p.		Rs. a. p.	Rs. a. p.
To Opening stock		29,253 0 2	By Total sales of salt during the year.	59,269 8 0	
„ Purchase and transport charges of salt.	27,052 2 8		„ Sale of denatured salt to agriculturists for manurial purposes.	1,087 8 0	
Add—Purchase and transport charges of salt purchased during the year but to be paid in 1938-39.	375 7 11		„ Miscellaneous receipts ..	98 11 0	
	27,427 10 7		„ Cash in hand as per last year's account remitted to treasury during the year.	95 0 0	
Less—Purchase and transport charges of salt included in the opening stock.	2,397 7 0			60,550 11 0	
	25,030 3 7	25,030 3 7	*Less*—Cash in hand at the yards at the end of the year.	42 0 0	
Escort charges of salt		548 14 0			
		54,832 1 9	Total amount remitted to treasury .	60,508 11 0	60,508 11 0
To Gross profit c/d		32,834 7 5	By Closing stock		27,157 14 2
		87,666 9 2			87,666 9 2

To Petty construction and repairs on yards maintained departmentally.	2,312 3 0		By Gross profit b/d		32,834 7 5
,, Petty construction and repairs on the yards maintained by the Public Works Department.	1,523 6 0	3,835 9 0	,, Net loss		4,912 5 1
Other non-contract contingencies ..	1,934 11 0				37,746 12 6
Add—Cost of stationery and forms ..	280 12 3	2,215 7 3			
Pay of yard and supervising establishment.		27,522 11 0			
Travelling allowance to yard and supervising establishment.		945 11 0			
House rent to yard establishment ..		380 3 0			
Amount on account of denatured salt recovered during the year, salt in respect of which will be issued during 1938-39.		160 8 0			
Extra work fees due during the year but not paid.		14 6 6			
Add—Pension contribution at 8½ per cent. of the maximum pay of establishment.		2,672 4 9			
		37,746 12 6			37,746 12 6

APPENDIX G.

Statement showing the operations of the Fish Curing Yards in the Ratnagiri and Kanara Districts of the Bombay Presidency for the year ended on March 31st, 1938.

Serial No.	Name of the yard.	Year.	Quantity of fish brought to be cured.	Quantity of salt issued.	Quantity of fish removed.	Proportion of fish to each maund of salt.	Total expenditure at the yard including pension contribution.	Receipts. Amount realised by sale of salt.	Miscellaneous receipts.	Stock of salt at the close of the year.	Value of salt in stock at the close of the year.	Total of Cols. 9, 10 and 11.
1	2	3	4	5	6	7	8	9	10	11	12	13
			Mds. s. t.	Mds. s. t.	Mds. s. t.		Rs. a. p	Rs. a. p.	Rs. a. p.	Mds. s. t.	Rs. a. p.	Rs. a. p.
	Ratnagiri District.											
1	Boria	1937-38	712 20 0	237 20 0	535 5 0	3·00	1,024 10 3	237 8 0	4 12 0	1,494 15 0	692 3 0	934 7 0
2	Jaigad	„ ..	13,422 0 0	4,457 0 0	10,066 20 0	3·00	3,512 13 6	4,457 0 0	4 12 0	2,039 10 0	922 13 6	5,381 9 6
								(a) 5 0 0				(a) 5 0 0
3	Varoda	„ ..	1,420 20 0	473 20 0	1,065 15 0	3·00	1,248 1 8	473 8 0	1 12 0	614 22 0	291 15 1	767 3 1
				(a) 9 28 0				(a) 5 0 0				(a) 5 0 0
4	Kalbadevi	„ ..	1,420 20 0	473 20 0	1,065 15 0	3·00	818 3 7	473 8 0	....	548 3 40	254 1 7	727 9 7
							*80 0 0					
5	Ratnagiri	„ ..	30,033 0 0	9,956 0 0	22,524 30 0	3·00	5,447 12 11	9,956 0 0	....	3,258 15 0	1,596 7 10	11,552 7 10
				(a) 19 16 0			*343 0 0	(a) 15 0 0				(a) 15 0, 0
6	Purnagad	„ ..	3,519 0 0	1,173 0 0	2,639 10 0	3·00	1,487 10 1	1,173 0 0	2 0 0	865 0 0	394 8 6	1,569 8 6
7	Jaitapur	„ ..	9,894 0 0	3,298 0 0	7,420 20 0	3·00	2,921 4 7	3,298 0 0	1 8 0	3,022 19 0	1,376 15 9	4,676 7 9
				(a) 2 36 40				(a) 1 8 0				(a) 1 8 0
8	Vizayadurg	„ ..	7,081 20 0	2,360 20 0	5,311 5 0	3·00	2,192 4 7	2,360 8 0	2 7 0	1,751 14 0	1,223 15 11	3,586 14 11
				(a) 23 11 0				(a) 12 0 0				(a) 12 0 0

9	Mumbri	..	„	..	1,515 0 0	303 0 0	1,136 10 0	5·00	1,068 7 6	303 0 0	4 8 0	392 5 0	199 8 11	507 0 11
						(a) 19 16 0				(a) 42 8 0				(a) 42 8 0
10	Mithbao	..	„	..	295 0 0	65 0 0	221 10 0	4·54	1,067 10 6	65 0 0	0 8 0	985 2 0	490 3 6	555 11 6
										(a) 10 0 0				(a) 10 0 0
11	Achra	..	„	..	1,193 0 0	301 0 0	898 0 0	3·96	907 8 0	301 0 0	0 12 0	606 30 0	319 14 3	621 10 3
12	Talasil	..	„	..	517 20 0	110 20 0	414 25 0	4·68	1,450 14 0	110 8 0	2 3 0	1,584 17 40	877 5 3	990 0 3
13	Malwan	..	„	..	21,148 20 0	4,463 20 0	15,861 15 0	4·74	3,882 9 8	4,463 8 0	16 2 0	4,945 33 40	2,351 13 0	6,831 7 0
						(a) 19 16 0				(a) 10 0 0				(a) 10 0 0
14	Deobag	..	„	..	12,003 0 0	2,653 0 0	9,002 10 0	4·52	2,354 10 1	2,653 0 0	8 8 6	3,502 33 0	1,637 11 1	4,299 3 7
15	Mobar	..	„	..	4,879 0 0	1,170 0 0	3,559 10 0	4·17	1,818 4 2	1,170 0 0	3 4 0	2,470 5 40	1,164 10 4	2,337 14 4
						(a) 19 16 0				(a) 10 0 0				(a) 10 0 0
16	Kochra	..	„	..	2,409 20 0	566 20 0	1,807 5 0	4·25	2,028 13 0	566 8 0	0 8 0	770 1 0	394 0 2	961 0 2
17	Vengurla	..	„	..	9,864 0 0	2,540 0 0	7,398 0 0	3·88	3,020 9 10	2,540 0 0	....	6,138 17 0	2,915 14 2	5,455 14 2
						(a) 966 5 0			*174 7 3	(a) 606 0 0				(a) 606 0 0
18	Shiroda	..	„	..	5,243 20 0	1,212 20 0	3,932 35 0	4·28	2,082 6 1	1,212 8 0	....	2,257 20 0	1,133 4 7	2,345 12 9
						(a) 685 12 16				(a) 353 4 0				(a) 353 4 0
	Total, Ratnagiri District.				1,26,571 0 0	35,814 0 0	94,959 0 0	..	38,384 10 0	35,814 0 0	50 8 6	37,246 23 0	18,237 6 5	54,101 14 11
						(a) 1,764 36 56			597 7 3	(a) 1,070 4 0				(a) 1,070 4 0

Note.—311 maunds 14 seers and 56 tolas of salt for agricultural purposes will be issued during the year 1938-39.
(a) Issued for agricultural purposes.
*Expenditure incurred by the Public Works Department on the yards transferred to them for maintenance and repairs from funds placed at their disposal.

APPENDIX G—*contd.*

Serial No.	Name of the yard.	Year.	Quantity of fish brought to be cured.	Quantity of salt issued.	Quantity of fish removed.	Proportion of fish to each maund of salt.	Expenditure including cost of construction, repairs etc. at the yards.	Receipts.				
								Amount realised by sale of salt,	Miscellaneous receipts.	Stock of salt at close of the year.	Value of salt in stock at the close of the year.	Total of Cols. 9, 10 and 12.
1	2	3	4	5	6	7	8	9	10	11	12	13
			Mds. s. t.	Mds. s. t.	Mds. s. t.		Rs. a. p.	Rs a. p.	Rs. a. p.	Mds. s. t.	Rs. a p.	Rs. a. p.
	Kanara District											
19	Baitkhol	1937-38	280 0 0	56 0 0	224 0 0	5·00	2,427 1 5	56 0 0	2 1 0	3,705 8 40	1,466 10 4	1,524 11 4
20	Majali	,, ..	13,086 0 0	3,399 0 0	9,814 20 0	3·84	2,532 9 6	3,399 0 0	9 0 0	1,622 18 0	657 7 9	4,065 7 9
				(a) 1 18 0			*77 2 9	(a) 0 12 0				(a) 0 12 0
21	Bingi	,, ..	13,175 0 0	4,025 0 0	9,150 0 0	3·27	2,994 2 11	4,025 0 0	....	1,559 9 0	616 10 3	4,641 10 3
				(a) 19 16 0			*77 2 10	(a) 10 0 0				(a) 10 0 0
22	Chendia	,, ..	21,139 0 0	6,749 0 0	14,395 0 0	3·13	3,797 4 8	6,749 0 0	5 0 0	1,926 1 0	748 1 0	7,502 1 0
							*115 14 10					
23	Kodar	,, ..	431 0 0	135 0 0	300 15 0	3·19	761 10 7	135 0 0	....	1,459 32 0	751 3 9	886 3 9
24	Harwada	,, ..	7,239 0 0	2,166 20 0	4,947 30 0	3·34	1,858 5 8	2,166 8 0	....	1,808 20 0	718 10 10	2,885 2 10
							*129 9 4					
25	Keni	,, ..	3,757 0 0	1,277 0 0	2,860 35 0	2·94	1,605 13 1	1,277 0 0	....	1,492 26 0	573 2 0	1,850 2 0
							*77 2 10					

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26	Gangawali	..	„ ..	3,482 0 0	1,030 0 0	2,659 24 0	3·38	1,026 15 2	1,030 0 0	2 3 0	589 0 0	232 11 2	1,264 14 2
27	Kumta	..	„ ..	2,849 20 0	858 0 0	1,864 35 0	3·32	1,231 5 5 *77 2 10	858 0 0	2 6 6	1,082 34 0	427 1 11	1,287 8 5
28	Mallukurwa	..	„ ..	5,754 0 0	997 20 0	4,756 20 0	5·71	1,101 1 3	997 8 0	....	1,561 33 0	627 10 9	1,625 2 9
29	Manki	..	„ ..	2,648 20 0	580 20 0	1,986 15 0	4·56	1,186 3 5	580 8 0	10 0 0	1,056 28 0	421 15 7	1,012 7 7
30	Murdeshwar	..	„ ..	4,914 0 0	916 20 0 (a) 7 30 0	4,095 0 0	5·36	.... *77 2 10	916 8 0 (a) 4 0 0	5 0 0	1,166 0 0	499 12 2	1,421 4 2 (a) 4 0 0
31	Shirali	..	„ ..	3,160 20 0	779 20 0	2,481 0 0	4·05	1,156 3 5 *140 2 10	779 8 0	....	1,543 34 40	751 1 0	1,531 9 0
32	Bhatkal	..	„ ..	2,194 0 0	486 0 0 (a) 4 34 0	1,708 0 0	4·51	692 6 6 *77 2 10	486 0 0 (a) 2 8 0	12 8 0	827 10 0	427 5 3	925 13 3 (a) 2 8 0
	Total, Kanara District ..		..	84,109 20 0	23,455 20 0 (a) 33 18 0	61,243 34 0	..	23,242 15 7 *925 14 9	23,455 8 0 (a) 17 4 0	48 2 6	21,401 14 0	8,920 7 9	32,424 2 3 (a) 17 4 0
	Grand Total ..		..	2,10,680 20 0	59,269 20 0 (a) 1,798 14 56	156,202 34 0	..	61,627 9 7 *1,523 6 0	59,269 8 0 (a) 1,087 8 0	98 11 0	58,647 37 0	27,157 14 2	86,526 1 2 (a) 1,087 8 0

Note.—311 maunds 14 seers and 56 tolas of salt for agricultural purposes will be issued during the year 1938-39.
(a) Issued for agricultural purposes.
*Expenditure incurred by the Public Works Department on the yards transferred to them for maintenance and repairs from funds placed at their disposal.

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